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ABSTRACT

Rules and guidelines are provided for subject indexing in the ERIC system. The principle of "subject access" is discussed with particular reference to "coordinate indexing," which involves designating subject content by unit terms (or tags) that may be put together or "coordinated" for subsequent retrieval. The nature of educational literature and the characteristics of educational community user groups are delineated in order to place ERIC indexing in proper perspective. Indexing tools necessary for the ERIC indexing process are also described, including the "Thesaurus of ERIC Descriptors," the "ERIC Identifier Authority List," and the "ERIC Indexing Handbook (Clearinghouse Indexing Practices)." Detailed guidelines are presented on the indexing process itself, involving: (1) examination of the document; (2) identification of indexable information, e.g., population characteristics (including educational level and age level), document form/type, curriculum or educational subject/field, activity, methodology, materials, audience, and proper names; (3) translation and negotiation of indexable concepts into approved terminology, i.e., ERIC Descriptors and Identifiers. Additional guidance is offered on several special indexing issues, including specificity of indexing, weighting (major/minor terms), over- and under-indexing, index term capitalization and punctuation, and the indexing review process. (JH)

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ERIC

Processing Manual

Rules and Guidelines for the Acquisition, Selection, and Technical Processing of Documents and Journal Articles by the Various Components of the ERIC Network

Section VII: Indexing

June 1992

Educational Resources Information Center (ERIC)
U.S. Department of Education

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SUMMARY OF SIGNIFICANT RULES

1. Descriptors used in the indexing process must be in the structured vocabulary of the *Thesaurus of ERIC Descriptors*. Proposed Descriptors are entered in the Identifier field until approved and implemented in the *Thesaurus*. (See **Section VIII, Part 1**, for adding terms to the *Thesaurus*.)

2. The Identifier field, in addition to its use for proposed Descriptors, is used to index the names of specific entities, such as projects, pieces of legislation, persons, places, organizations, tests, groups, and items of equipment. Identifiers must either be in the *Identifier Authority List* (IAL) or conform to the precedents (format rules) of the IAL. (See **Section VIII, Part 2**, for rules for new Identifiers).

3. "Major" subject matters of the document*, whether indexed as Descriptors or Identifiers, must be preceded by an asterisk (*) to distinguish them from less substantial subject matters or "minor" terms. The following kinds of terms should be avoided as major, where possible:

   (a) Educational level, age level, methodology, publication/document type, or population terms, unless they are the subject of the document.

   (b) Multiple terms beginning with the same word, thereby causing unnecessary repetitive access in the printed indexes.

   (c) Broad terms that lack discrimination (see list in **Figure VII-10**) and that otherwise might be too heavily posted in a single printed index.

4. At least one (1) major Descriptor must be assigned to every document in the database. No more than 5 major Descriptors and 2 major Identifiers, or 6 major Descriptors and 1 major Identifier, are allowed.

5. The total number of assigned Descriptors per document may not exceed 700 characters, including punctuation and spaces (about 30 terms). The field size for Identifiers is 500 characters (fewer than 20 terms). The average number of index terms actually experienced for RIE accessions (ED numbers) is twelve (12). The average actually experienced for CIJE accessions (EJ numbers) is ten (10). (RIE documents are usually larger than CIJE articles, and larger items usually need more index terms.)

6. Index in depth, or exhaustively, all significant concepts covered in the document.

7. Index to the level of specificity of the subject matter covered by the document. Do not index "up" to higher generic levels than the document actually deals with. Also, do not overindex "down" to every sub-element mentioned in the document.

8. Index the document and exposition in hand; avoid indexing implications, possible uses, and other aspects referred to, but not actually dealt with.

9. Index on the basis of the entire document, not just a part such as the "Introduction" or "Conclusions."

*"Document" is used here to refer to both documents and journal articles, both of whose bibliographic citations comprise the ERIC database.

10. If a document is concerned with a particular educational (grade/academic) level, the indexer must index to that level. Few documents do not need an educational level Descriptor. To avoid overlooking this requirement, indexers should acquire the habit of indexing educational level first, before any other indexing is done. (See **Figure VII-2** for the 14 mandatory "educational level" Descriptors.)

11. Insofar as possible, index terms should embody the other data elements (title, abstract/annotation, etc.) of a citation. This helps to justify the assigned terms and provides reassurance to the user. However, it is important to remember ***not*** to substitute ERIC vocabulary terms in an abstract in place of the author's own words. By using a controlled vocabulary for its indexes and the author's language for its abstracts, ERIC provides maximum flexibility and accessibility in searching and retrieval.

12. Index terms are written with initial capital letters (except for acronyms). Except when used as the initial word, articles and connectives (prepositions and conjunctions) are not capitalized in a Descriptor. Exceptions to this rule occur in certain Identifiers, e.g., "Graduate (The)" (see **Figure VII-11**).

13. Index terms are written without punctuation or special characters, with the sole exception being parentheses (to enclose a qualifier).

14. Overindexing and underindexing both should be avoided. The excessive use of terms beginning with the same word can lead to overindexing, as can the unrestrained listing of every minuscule concept contained in a smaller document. Underindexing usually results from failure to assume the searcher's point of view.

15. When indexing cross-scope documents, indexers should consult the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* (**Appendix C**) for the "in-house indexing rules" of the other Clearinghouses, and the *ERIC Clearinghouse Scope of Interest Guide* (**Appendix A**) which lists other Clearinghouses' most frequently used Descriptors.

16. Indexers should always try to put themselves in the place of the user or searcher by asking two questions: Can the specific topic(s) covered by the document be retrieved by my assigned index terms? Would I be satisfied to retrieve the document in a search using my assigned terms (especially, my assigned major terms)?

VII. INDEXING

A. Introduction

Any collection of books, articles, reports, or other recorded information, is of value only when the items in the collection are accessible and can be retrieved. The purpose of indexing is to be able to locate items in a collection according to the characteristics of those items. Access points may be virtually any of the fields of data recorded for the items, e.g.:

- personal author;
- title;
- report number;
- contract/grant number;
- corporate source;
- language;
- accession number;
- subject;
- target audience;
- publication type.

The creation of the various non-subject data elements is usually called "Descriptive Cataloging"; the creation of the subject-oriented data elements is usually called "Subject Indexing." This section is concerned with the latter activity, i.e., establishing access by subject matter. The "indexing" of non-subject data is discussed in Section V, "Cataloging."

The ERIC Technical Steering Committee's 1989 *ERIC Indexing Handbook (Clearinghouse Indexing Practices)*, containing summaries of in-house, scope-specific indexing practices (ERIC Clearinghouse-by-ERIC Clearinghouse), as well as a general list of important indexing reminders, has been included in the *ERIC Processing Manual* (EPM) as Appendix C.

B. Subject Access

An indexer can establish subject access to the items in a collection in various ways:

- assignment of conventional "Subject Headings," as can be found on library catalog cards, e.g., "RUSSIA---POLITICS AND GOVERNMENT---POST-SOVIET ERA, 1992-"
- assignment of the item to a position (identified by number) in a classification scheme, such as the Dewey Decimal Classification or the Library of Congress Classification, e.g., 510.78 or QA76.53.

- identification of key words (as opposed to trivial words) in the title (and perhaps abstract) of the document.[1]

- assignment of index terms from controlled lists of words and phrases, cross-referenced to show synonymous, hierarchical, or other purposeful relationships or characteristics; these terms are called variously "tags," "descriptors," "unit terms," etc.

Subject indexing in ERIC is of the last type. The principal index terms are called "Descriptors," and the techniques followed are generally those that have been developed over the years under the rubric "Coordinate Indexing." It is not the task of this section to discuss all types of indexing. It is necessary, however, to provide some explanation of the nature of, and the rationale behind, Coordinate Indexing.

C. Coordinate Indexing

1. General

Coordinate Indexing arose from the need to perform indexing in depth. The report literature that began to burgeon in the 1940s could not be adequately characterized, in terms useful for working scientists and technicians, via two or three library subject headings affixed to 3x5 catalog cards. Those working with the report literature desired rather to attach a term or tag to every significant concept in a report. This often involved 10-20 concepts. The possible combinations of these many concepts, if recorded in subject heading form, would have been prohibitive.

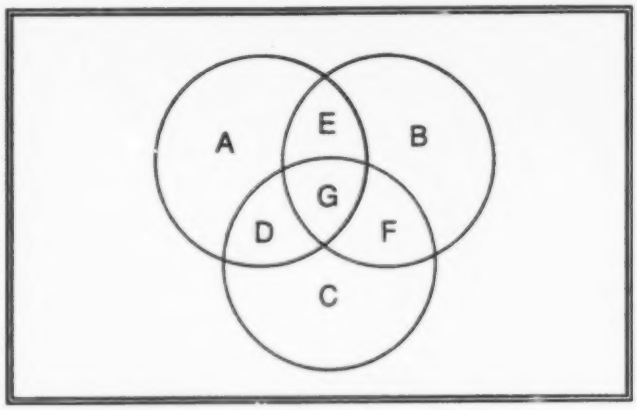
The solution arrived at was to largely eliminate the relationships between concepts and rely on unit concepts. The relationships are then picked up or re-constructed by combining several terms in the search procedure. The assignment of index terms that are meant to be put together or coordinated at the time a search is conducted is called "Coordinate Indexing," because the searcher must coordinate the index terms to arrive at the desired result.

2. Searching a File That Has Been Coordinate Indexed

The entire justification for the indexing process lies in the retrieval/searching process. It is important, therefore, for the indexer to understand how searches are conducted. It is a standard admonition to indexers for them to put themselves in the shoes of the searcher.

[1]The word "document(s)" is used throughout this section to refer to both documents (ED-numbered ERIC accessions) and journal articles (EJ-numbered ERIC accessions). Documents are announced in the monthly abstract journal *Resources in Education* (RIE). Journal articles are announced in the monthly abstract journal *Current Index to Journals in Education* (CIJE).

The strategy used in searching in a coordinate indexing system is generally based on set theory and Boolean** logic. Drawn below is a Venn** diagram consisting of three overlapping circles, labeled A, B, and C. The areas of overlap of two circles are labeled D, E, and F. The overlap of all three is called G.



Let us suppose:

- Circle A represents the documents in the ERIC collection indexed by the Descriptor TEACHING METHODS.
- Circle B represents the documents indexed by the Descriptor SCIENCES.
- Circle C represents the documents indexed by the Descriptor DISADVANTAGED.

The areas of overlap (D, E, and F) represent those documents indexed by two of the Descriptors. Area G represents those indexed by all three Descriptors.

In phrasing a search question requesting material on methods of teaching science to the disadvantaged, the searcher might specify those documents indexed by both the terms TEACHING METHODS and DISADVANTAGED, i.e., those documents in Areas D and G.

Or the searcher might ask for documents indexed by TEACHING METHODS and either DISADVANTAGED or SCIENCES. This would be those documents in Areas D, E, and G. If the searcher decided to look at documents indexed by TEACHING METHODS and SCIENCES, but not in the area of the DISADVANTAGED, this would be those in both A and B, but not in C, resulting in Area E only, excluding area G.

A search for items indexed by all three of the terms (TEACHING METHODS and DISADVANTAGED and SCIENCES) would be restricted to Area G.

** See Glossary for definitions.

All combinations above are specified using the Boolean logical operators AND, OR, NOT.

- AND indicates those things common to two or more groups.
- OR indicates those things in two or more groups, whether or not in common.
- NOT indicates those things not in a particular group or groups.

As can be seen, searching in this way quickly gets complicated and requires special assisting devices such as "double-dictionaries" or computers to help make the coordinations. Manual searching can conveniently coordinate only two terms.

3. Terminology in Coordinate Indexing

In discussing Coordinate Indexing, it is important to have available the standard terminology that has developed.

a. Pre-Coordinated Term

This is a concept that is prevalent enough in a given system to warrant representation by a single unique term rather than by terms representing its several components. For example, the ERIC system contains both the single terms TEACHERS and ATTITUDES. The concept "Teacher Attitudes" could be represented by the assignment of these two separate terms. However, this concept appears frequently enough and is searched frequently enough to warrant pre-coordinating the terms (that is, at indexing time, prior to searching) into the single useful index access point TEACHER ATTITUDES. The ERIC system pre-coordinates terms both on the basis of utility, as indicated above, and in order to have maximally useful terms appearing in its printed indexes, which are manually searched.

(Note that a complex concept, represented by a multiword pre-coordinated term, can still itself be post-coordinated at search time to form an even more complex concept, e.g., INSERVICE TEACHER EDUCATION and COMPUTER ASSISTED INSTRUCTION.)

b. Post-Coordination

This refers to the action, after (or post) the indexing process, of coordinating two or more terms to make up the desired concept. For example, rather than develop the distinct concept "Italian Speakers" or "Italian Speaking" into a single pre-coordinated term, it might be decided to rely on post-coordination of the two separate terms ITALIAN and NATIVE SPEAKERS.

c. **Posting**

Posting means to record. A document accession number can be "posted" to a list of similar numbers that have all been indexed by the same term. An index term can, in turn, be "posted" along with other such terms, to a document record. The first usage is the most common; the accession numbers are sometimes referred to as "postings."

d. **False Drops**

In a coordinate indexing system, the terms assigned to a document can often go together in ways they are not meant to. A retrieval based on such an unintended coordination is called a "false drop." For example, a document could be indexed by the terms ACTIVISM, STUDENTS, and TEACHERS. The document dealt with "student activism," but a search aimed at "teacher activism" might retrieve it as a "false drop."

e. **Roles and Links**

These devices to improve retrieval results are <u>not</u> used in the ERIC system.

- "Roles" refer to additional information attached to index terms to designate the functional sense in which they are used. For example, an extra tag could be added to terms to identify those that refer to elements of the curriculum (as distinct, say, from areas of research).

- "Links" refer to methods of indicating which Descriptors assigned to a document may legitimately be coordinated. Descriptors from the same area of the document are given some similar additional tag. The process is very like the standard library practice of "analyzing out" selected distinct sections of a larger work, treating them as if they were documents in themselves.

D. Indexing for ERIC—Purpose and Approach

The purpose of indexing for ERIC is to provide subject access to the documents announced in RIE and to the articles announced in CIJE. The indexer, or abstractor/indexer, examines the document, chooses the concepts to be indexed, and translates these concepts into the indexing terminology of the system. In the ERIC system, a modified coordinate indexing approach is used and the controlled vocabulary or authority list containing the index terms that may be used is the *Thesaurus of ERIC Descriptors*. The *Thesaurus* lists all terms that can be used by the indexer, together with a display of terms that are Broader, Narrower, or Related to the given term. Cross-references are made from Synonyms, or other terms not to be used, to authorized index terms.

A detailed description of the role and function of the *Thesaurus*, and a bibliography of closely related lexicographic materials, are usually included in the published edition of the *Thesaurus*.

E. ERIC's Modified Coordinate Approach

An indexer in the ERIC system must have two distinct objectives:

- In-depth extraction of all significant concepts in the document so that the machine-readable database will be manipulatable by these tags and searchers using computers can therefore access them;

- Selective identification of the major concepts in the document for use in preparing printed indexes to RIE and CIJE, and for subsequent manual searching (as well as computer searching).

The in-depth indexing may safely use virtually any term in the authority list (although the use of some very broad, single-word concepts can be suspect). The selective indexing for the benefit of the printed index, on the other hand, must keep in mind that manual searching is limited in its ability to coordinate several terms. Therefore, the terms selected to represent the major concepts of the document should in general be at a level of specificity that will be useful to the user. For example, use of the specific single term BIOCHEMISTRY would be preferable to use of the two broad terms BIOLOGICAL SCIENCES and CHEMISTRY, and would save the manual user considerable work. The selective indexing is also limited in the number of terms that it can assign due to physical and economic limits on the size of the printed indexes, thereby also arguing for care in finding the specific, perhaps pre-coordinated, term, rather than several less well-targeted terms.

F. Nature of the Educational Literature

Virtually anything can be taught. The field of education, therefore, comprises many subjects and is often dependent on or derived from work that is basically in other disciplines. The literature of education takes many forms. ERIC deals with all significant educational documents regardless of format, e.g.:

- research reports;
- journal articles;
- speeches;
- papers presented at meetings;
- state-of-the-art surveys;
- statistical compilations;
- teacher guides;
- reviews;
- government hearings and legislation;
- curriculum materials;
- bibliographies;
- newsletters, etc.

The methods of inquiry used in these various formats range from the empirical to the philosophically discursive. What controls selection (see **Section III**) is overall quality and the judgment as to whether the item would be of interest and value to others.

The literature collected, announced, and indexed by ERIC exhibits perhaps more variability than that of any other information system. A laboratory study on the nature of long-term memory, or a dissertation on the educational philosophy of John Dewey, may be announced on the same page as a guide to kindergarten teachers on using finger paints. The literature of education is multifaceted in nearly every sense:

- its topics;
- its approaches and methods;
- its formats;
- the users for whom the literature is intended.

G. Educational Community User Groups

The users of any information system may be divided into two main groups:

1. ***Internal Users* of the System**
(information specialists, librarians, document processors, etc., employed by components of the system)

The "internal" users tap the ERIC file in response to a variety of needs:

- telephone and correspondence inquiries;
- searching and preparing bibliographies for clients;
- preparing information analysis products (IAPs) and other publications.

Working in basically the same environment as the indexers, it is relatively easy for the internal users of the system to provide feedback to the indexers (at their own Clearinghouse and at others also) as to access points that are needed and that the indexer should provide whenever relevant. It is common within the ERIC system for each Clearinghouse to have its particular "indexing rules" and lists of "most frequently used index terms," which the indexer makes use of specifically to meet internal information needs. (See *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C], which provides the in-house rules, and *ERIC Clearinghouse Scope of Interest Guide* [Appendix A], which lists the Clearinghouses' most frequently used Descriptors.)

2. ***External Users* of the System**
(teachers, scholars, researchers, lay people, etc., in the field)

The "external" users are a heterogeneous group ranging across a broad spectrum from:

- the generalist to the specialist;
- the trained member of the educational community to the untrained lay public;
- the sophisticated basic researcher to the applied sector occupied by administrators, teachers, legislators, etc.

Indexers must keep in mind these various groups and not slant their indexing solely toward one class or level of user. ERIC indexing must satisfy the needs of all of the above, striking a balance between overindexing, which can create "red-herrings" for searchers, and underindexing, which can effectively hide a document from potential users.

Feedback from external users to indexers is often difficult to obtain, but can be extremely valuable as an indicator both of access points needed by the field and new index terms that should be added to the *Thesaurus*.

H. Indexing Tools

There are several publications that are either necessary or very helpful for the indexer to consult during the indexing process:

1. *Thesaurus of ERIC Descriptors*

All Descriptors used by an indexer or searcher must be in the *Thesaurus of ERIC Descriptors*. The *Thesaurus* is the major reference used in translating educational subject matter into terminology acceptable by the system. It contains approximately 10,000 vocabulary terms, of which approximately 5,600 are main-entry Descriptors and 4,400 are non-indexable Use references and "dead" terms.

The *Thesaurus* is an authority list that provides control over the indexing vocabulary and helps to ensure consistent use of terms throughout the system. The *Thesaurus* lists all terms that have been formally accepted by the system. Terms that are not completely self-evident are provided with definitions/Scope Notes. Cross-references are made from Use references or synonyms (terms not to be used in indexing) to the approved word forms. Most main terms carry class membership (generic relationships) information in the form of terms that are "Broader" and "Narrower" to the given term. Other types of relationships are noted via the display of "Related" terms.

The *Thesaurus* brings to the attention of the indexer those terms that might be employed in making a search for a document, and it brings to the attention of the searcher those terms that might have been employed by the indexer in describing documents pertinent to the searcher's question. The structured nature of the vocabulary is intended to guide both sets of users towards similar conclusions and actions. A thorough knowledge of and familiarity with the *Thesaurus* is required of all indexers.

The data presented in the *Thesaurus* are available in four formats, each providing the indexer with a different way of entering the *Thesaurus* and moving through it to find the exact terms to use in indexing.

- The Alphabetical Display presents all terms, including Synonyms, arranged alphabetically, together with definitions and complete cross-reference structures. Postings counts and add dates are included. This complete context makes it essential that this display be consulted by indexers before a final decision is made to use any particular Descriptor.

- The Rotated Display provides a permuted alphabetical index to all words that form Descriptors in the *Thesaurus* (Synonyms included). In other words, PASS FAIL GRADING appears under PASS, under FAIL, and under GRADING. This display is useful in determining all usages of a particular word in the *Thesaurus*, without respect to its position in a phrase or multiword Descriptor. It tends to group related terms that may often be separated in the main Alphabetical Display, thus aiding indexers in performing a more complete search of the *Thesaurus*, search analysts in translating their inquiry into the language of the system, and subject analysts in structuring new Descriptors.

- The Hierarchical Display presents sets of generic tree structures showing, for every term in the *Thesaurus*, the trail of narrower terms below it and broader terms above it, each carried to the farthest extreme. Subordination (or class membership) is indicated via indentions, as in the partial tree shown below:

```
BT
▲                    :LANGUAGES
├ FILE POINT ——►AMERICAN INDIAN LANGUAGES
│                    .ATHAPASCAN LANGUAGES
▼                    ..APACHE
NT                   ..NAVAJO
```

"American Indian Languages" has above it the Broader Term "Languages" and immediately narrower to it the term "Athapascan Languages." "Apache" and "Navajo" are in turn both Narrower Terms to "Athapascan Languages."

The Hierarchical Display can be useful to the indexer in finding the most appropriate level of specificity to which to index a document.

- The Descriptor Group Display arranges each of the Descriptors in the *Thesaurus* into one (and only one) of several broad categories, e.g., "Equipment." The display shows each of these categories together with alphabetic arrays of the terms that have been assigned to each. The display is provided for browsing and rapid scanning of large numbers of Descriptors that may be of interest within a broad area. It is meant to provide suggestions and to be of general assistance to those using the *Thesaurus* for indexing, searching, and the structuring of new Descriptors. It is not a formal classification scheme. Each Group is defined by a Scope Note and is represented by a code number.

2. ***Identifier Authority List*** **(IAL)**

Identifiers are semi-controlled vocabulary terms used to supplement Descriptor indexing. They are usually proper names of specific entities, including organizations, projects, persons, items of equipment, geographic locations, legislation, groups of people, literary or artistic works, etc. Their nearly infinite numbers and frequently transient tendencies usually make them unsuitable for *Thesaurus* consideration.

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Identifiers also may be generic concepts, either new to education or with accumulating usages in the database, that have yet to be approved as *Thesaurus* Descriptors. All candidate Descriptors, awaiting entry to the *Thesaurus*, are indexed as Identifiers.

Approximately 50,000 authorized Identifiers, edited for format and informational content, are listed in the *ERIC Identifier Authority List* (IAL) or its cumulative supplement. (ERIC Identifiers that are in the database, but not in the IAL, await evaluation and IAL consideration, corrective activities occurring as resources permit.)

Indexers use IAL Identifiers to provide additional/supplemental indexing specificity that is not always possible with Descriptors alone. Searchers, in turn, find the diverse terminology of the IAL helpful for fine-tuning their search strategies.

In addition to the normal word order position, inverted formats and other possible variations should be checked before creating a new Identifier for RIE or CIJE. If a term is not found in the IAL, the indexer should observe the precedents of the IAL, and the guidelines and standards for establishing Identifier name forms found in Section VIII, Part 2. New Identifiers should use the author's language provided that it conforms to the IAL precedents and guidelines.

The IAL is arranged in two displays:

- The main Alphabetical Display lists all authorized ERIC Identifiers, together with Scope Notes, Use/UF cross-references, postings counts, and codes identifying the broad category to which a term belongs. This complete context makes it essential that this display be consulted by indexers before a final decision is made to use any particular Identifier.

- The supplementary Category Display lists all IAL Identifiers under the following 20 broad headings:

  - Conferences/Meetings
  - Curriculum Areas
  - Equipment (including computer programs)
  - Facilities
  - Geographic Locations
  - Groups (ethnic)
  - Groups (occupations)
  - Groups (other)
  - Health-Related (including psychology)
  - Historical/Special Events
  - Languages/Linguistics
  - Laws/Legislation
  - Methods/Theories
  - Miscellaneous
  - Organizations/Institutions
  - Personal Names
  - Projects/Programs
  - Science & Technology
  - Tests/Testing
  - Titles (literary and artistic)

3. ERIC on CD-ROM, ERIC Online, and/or the Printed Indexes of *Resources in Education* and *Current Index to Journals in Education*

CD-ROM or online searches of the ERIC database, or, if those options are unavailable, looking through prior issues of the RIE and CIJE announcement journals themselves, can be useful:

- in determining how particular terms have been used in the past, i.e., what kinds of documents they have been applied to;
- in determining how documents in a particular series and/or on the same subject have been indexed in the past.

If available, CD-ROM or online searches are additionally useful:

- in determining the most recent postings of a term, whether they were in RIE or CIJE, and whether they were major or minor;
- in determining whether two or more terms have been used together with any frequency to index the same kinds of documents.

It is helpful to users if documents in the same series are given a consistent indexing treatment and can be relied on to be retrievable via the same terms if they deal with the same subject.

4. ***ERIC Indexing Handbook (Clearinghouse Indexing Practices)*** **(EPM Appendix C)**

This handbook, originally prepared by the ERIC Technical Steering Committee and released in May 1989 as a supplement to the EPM Section VII — "Indexing," has been updated and is now included in the EPM as a Appendix C. It contains summaries of the in-house, scope-specific indexing practices, ERIC Clearinghouse-by-ERIC Clearinghouse, prepared by the indexing staff at each of those Clearinghouses. Inevitably some documents overlap between and among Clearinghouses. Often the Clearinghouse doing the processing of such documents can gain insight as to how the other Clearinghouse(s) would have indexed the document had it been assigned to them. The purpose of the *Handbook* is to provide guidance concerning the indexing idiosyncracies of the Clearinghouses, for use in cross-scope-area indexing (and searching).

The *Handbook* also contains a summary of important ERIC indexing reminders, based on comments and discussions at ERIC technical meetings; the summary has been used as a handout at several indexing seminars and database user meetings to highlight what ERIC indexing is, that is, what it consists of and what it seeks to accomplish.

For cross-scope-area indexing, the *Handbook* is used in conjunction with the ERIC Clearinghouse *Scope of Interest Guide*.

5. ***ERIC Clearinghouse Scope of Interest Guide*** **(EPM Appendix A)**

This guide provides a complete description of each Clearinghouse's area of coverage. It also presents lists, or mini-thesauri, of those Descriptors most frequently used by each Clearinghouse.

Examination of this tool and the *ERIC Indexing Handbook* can prevent a narrow or parochial indexing approach and can lead to indexing from several potentially useful viewpoints, rather than just that of the particular Clearinghouse in possession of a cross-scope-area document.

6. *ERIC Abstractor/Indexer Workbook* (ED 207 614)

This workbook, like the *Indexing Handbook*, is another product of the ERIC Technical Steering Committee. Originally prepared in 1978, it was revised in 1981 to be compatible with various *ERIC Processing Manual* changes, including new mixed "informative/indicative" abstracting rules and changes in indexing necessitated by the completely revised 1980 ERIC *Thesaurus*.

Although requiring periodic updating, the workbook is a valuable training device for ERIC abstractor/indexers, especially those who are new to the system. With a current *Thesaurus* and IAL in hand, it is a relatively simple matter to update the indexing examples as one goes through the workbook exercises.

7. Other Reference Sources

Dictionaries, encyclopedias, glossaries, handbooks, and major textbooks can all aid the indexer in translating the language of a given document into usable index terms. The jargon of specialized fields must be avoided in indexing in favor of terms more widely and authoritatively accepted. Terms having different meanings in different fields must not be confused with one another.

Reference works of particular value in researching Descriptors are listed in the bibliography in Section VIII, Part 1, item C.1.e.(3), "Appearance in Other Thesauri." Reference works of particular value in researching various kinds of Identifiers are listed in Section VIII, Part 2, in the separate descriptions of the Identifier categories (geographic locations, project/programs, tests/testing, etc.)

Another ERIC product that can be useful in indexing is the collection of cumulative RIE indexes on microfiche published annually by the ERIC Document Reproduction Service (EDRS). Included are separate indexes for subject, author, institution, title, Descriptors, and Identifiers, each from the beginning of ERIC through the most recent full year. The Descriptor and Identifier Indexes are in effect usage reports of Descriptors and Identifiers in the RIE portion of the database. Descriptors and Identifiers are listed alphabetically in separate reports, with accession numbers (identified as major or minor) and numbers for major, minor, and total usages provided under each entry.

Clearinghouses should keep records of their specific in-house indexing decisions for future reference by their own indexing staffs, as well as other ERIC indexers via documentation in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

I. Indexing Process

1. General

Indexing begins with the examination of the document. Both indexing and abstracting for the ERIC system should be based on the entire document. Nevertheless, experienced indexers know that certain sections of documents yield useful information more readily than others. Knowing where to look and to concentrate one's attention can be important to capturing the essence of a document in the allotted time.

Index the document in hand, not the document the writer would like to have written or intends to write the next time. Do not confuse speculation, or referrals to implications and possibilities, with real content.

The indexer should attempt to capture all significant concepts treated in the document. This is called indexing in-depth or exhaustive indexing. The indexer should index concepts at the generic/specific level actually covered by the document, i.e., index as generically as necessary, but as specifically as possible. For example, if the document concerns itself solely with the Navajo language, index to NAVAJO; do not index to the "higher" or more general levels LANGUAGES or AMERICAN INDIAN LANGUAGES. Consistency is important in indexing, both among more than one indexer or within the performance of a single indexer (self-consistency). Such consistency, however, is difficult to attain. Indexers should always:

- proceed by rule, rather than by subjective decision;
- be aware that specific entities (such as geographic locations, project names, test names, individuals, etc.) though not in the *Thesaurus* are, nevertheless, indexable via the Identifier field.

A full discussion of the different types of Identifiers and how to structure such terms is provided in Section VIII, Part 2.

All concepts selected as significant in the document must be translated into either existing Descriptors or existing or proposed Identifiers. Use the *Thesaurus* or IAL to do this. Never proceed on the basis of memory. A minor discrepancy in the spelling or ending of a Descriptor will lead to its later rejection by the ERIC software as invalid. For example:

ACCEPTABLE: AMERICAN INDIAN LANGUAGES

INVALID: AMERICAN INDIAN LANGUAGE

The same type of minor difference in an Identifier will not cause it to be rejected, but will lead to "scattering." (Scattering occurs when multiple versions of the same basic term appear on the file and in the indexes.) Scattering causes problems during retrieval and must be minimized. For example, if a searcher wanted to find instances where the UNIVERSITY OF CALIFORNIA LOS ANGELES was the subject of a document, all possible variations of that term that indexers might have employed would have to be searched, if the file contained a lot of "scatter," e.g.:

CALIFORNIA UNIVERSITY (LOS ANGELES)
CALIFORNIA UNIVERSITY AT LOS ANGELES
CALIFORNIA, UNIVERSITY OF (LOS ANGELES)
UCLA
UNIVERSITY OF CALIFORNIA (LOS ANGELES)
UNIVERSITY OF CALIFORNIA AT LOS ANGELES
UNIVERSITY OF CALIFORNIA IN LOS ANGELES
UNIVERSITY OF CALIFORNIA LOS ANGELES
UNIVERSITY OF CALIFORNIA, LOS ANGELES

An indexer must decide which concepts in a document are to be considered "MAJOR" and which "MINOR." This is done in order to restrict the size of the printed subject indexes and is also useful later in machine searching in those instances where relevance is more important than recall. MAJOR concepts, whether expressed as Descriptors or as Identifiers, must be asterisked (*). For example:

USED AS MAJOR TERMS	USED AS MINOR TERMS
*FAMILY PLANNING	FAMILY PLANNING
*CONTRACEPTION	CONTRACEPTION

The purpose of indexing is to make a document retrievable. At all times the indexer should evaluate the concepts being selected in terms of a hypothetical searcher:

- Would a searcher after a particular concept be satisfied to retrieve this document?
- Would the searcher be disappointed at the amount of information the document contained on the indexed concept?

Indexing is often described as being both a science and an art. It is scientific in that experimentation and practice over the years have derived good and consistent results. It is an art, however, in that as long as it is done by human beings it remains an expression of the individual judgment of an indexer and is not subject to rigorous consistency and exact results. The guidelines that follow do not and cannot always involve hard and fast rules. They provide indexers with a foundation and a philosophy, but only long experience and practical judgment can develop an expert.

2. **Examination of the Document**
(Training or practice exercises, using actual ERIC documents, are provided in the *ERIC Abstractor/Indexer Workbook*, ED 207 614.)

The experienced indexer is familiar with the information system (documents, vocabulary, users, etc.) and, in the examination of documents, has learned to focus attention efficiently in several ways, thereby permitting perhaps as few as one or two passes through the document for its evaluation and analysis. The inexperienced indexer, on the other hand, typically requires several passes through the document and engages in extensive paging back and forth.

The indexer should first concentrate on building a basic frame of reference for a given document:

- the document's source (personal author, corporate author, and sponsoring organization);
- its publication date and timeliness;
- its format and general organization;
- its relationship to the entire system, and its potential audience.

The indexer should come away from this brief step with a good idea of who did it, when, why, for whom, who paid, why it was selected, who might be interested, magnitude, etc.

The next step is to inventory and analyze the physical and organizational content of the document. Be aware that content varies greatly among documents.

- Title;
- Abstract;
- Introduction/Preface/Foreword
  (which may include historical and theoretical background);
- Description of methodology, experimental design, objectives, materials used;
- Work performed;
- Discussion;
- Results;
- Illustrative material
  (graphs, charts, photographs, tables, diagrams);
- Conclusions;
- Summary;
- Recommendations for further work;
- References;
- Appendixes;
- Indexes.

With this information in hand, the indexer can then proceed to a more detailed analysis of the document's subject content. This is usually done in a more selective journalistic sequence, concentrating on those sections revealed by the inventory above to be most information-bearing. The indexer should attempt to verify his or her interpretation of each section against following sections. For example, the Title should be compared with the Abstract, the Abstract with the Summary, and so on, until a clear, verifiable, supportable picture of what the document is really about emerges.

The relationship between the indexing process and the abstracting process should be noted here. The individual who abstracts a particular document inevitably absorbs much information regarding that document. This information may be utilized in the indexing process. This is particularly easy if the abstractor and the indexer are one and the same person. Indexing terms may be noted marginally or mentally during abstracting for later use (by oneself or others). If the abstractor and indexer are the same person, then the learning-about-the-document process required to perform the one function overlaps with that required for the other function, thereby saving time overall. If the abstractor and indexer are separate individuals, then inevitably both must go through the same learning process, resulting in less efficient staff utilization.

Whether the abstract is author-provided or written or modified by an ERIC abstractor, it is a good idea to see that as many of the indexed concepts as possible also appear in the other data elements describing the document, including the abstract. This provides the user with a reassuring explanation as to why a particular index term was used. In cases where there is no apparent or obvious connection between an index term assigned and the rest of the document description, the user is left puzzled as to whether the item is relevant to his or her needs.

Indexers should note that the above advice refers to concepts, not words. That is, indexers should remember that an author's actual language should be used in an abstract and never changed or "translated" to match ERIC Descriptors and Identifiers. The abstract is reserved for the author's own words (the actual language of the document), while Descriptors and Identifiers provide the system's controlled access vocabulary. Keeping both the language of the system and the language of the author gives the searcher both controlled and free access to the ERIC database.

3. **Identification of Indexable Information**
(See also "Indexing Reminders" section of *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].)

A primary rule is to index the document in hand. This rule may sound obvious, but it is easy to be trapped into indexing the implications, applications, projected uses, future directions, etc., of some documents rather than their actual content. This is a pitfall and should be avoided. For example, a bibliography of basic texts in adult education may have been originally compiled to support graduate study in adult education. Nevertheless, GRADUATE STUDY is not the subject matter of the document, but only one of the many possible applications. It should not be selected as an indexable concept.

Negative results can be as indexable as positive results, and as important to the user. For example, a research study may tend to disprove the hypothesis that participation in planning the educational program increases the student's desire to do well academically. The concept ACADEMIC ASPIRATION is definitely indexable insofar as it is one of the primary ideas (in this case a "dependent variable") that the research is investigating.

The indexer must always keep in mind that it is concepts that are being indexed, not merely the author's words in which the concept is expressed. An author may choose to use excessively exotic, obscure, specialized, mis-interpreted, colloquial, or otherwise unacceptable language. Do not engage in mere "word indexing." Isolate the concept and meaning behind the words and then choose the words the system has designated for the concept. (Of course, insofar as it is possible to use the language and terminology of the author and still observe this admonition, then the best of both worlds is served.)

For example, an author may use the term VOCATIONAL EDUCATION in discussing training programs that attempt to make adults employable by providing them with basic skills in reading, writing, and arithmetic. The *Thesaurus of ERIC Descriptors* defines this term, however, in a way that is at variance with this author's usage, as follows:

> *VOCATIONAL EDUCATION:*
>
> *Formal preparation for semiskilled, skilled, technical, or paraprofessional occupations usually below the baccalaureate degree.*

Examination reveals that the concept the author is really discussing is represented in ERIC by the Descriptor ADULT BASIC EDUCATION, which is defined in the *Thesaurus* as follows:

> *ADULT BASIC EDUCATION:*
>
> *Education provided for adults at the elementary level, usually with emphasis on communicative, computational, and social skills.*

As can be seen from the above, it should be kept in mind that authors do not necessarily use words precisely and that it is up to the information system to impose its own terminological order on a literature that speaks from many different viewpoints.

Mere mention of any concept within a document does not mean that it is indexable information. If the concept was the reason for the document to be written, or, if without the concept the document would not exist or would be altered significantly, then the concept is indexable information. The indexer should assume the posture of a skeptic who has to be convinced by good evidence of the appropriateness and applicability of any given concept.

To ensure comprehensive and uniform treatment of documents, indexers should always refer to a check list of indexable elements. The use of this check list will help guarantee reasonable exhaustivity in indexing. Documents entering the ERIC system usually contain the following elements of information, which are treated individually in detail immediately following this list:

- Population Concepts

  —Educational (i.e., Grade/Academic) Level
  —Age Level
  —Other Characteristics, e.g., ethnicity, religion, etc.

- Activities/Action Concepts; Methodology/Materials Concepts
- Curriculum Concepts
- Document Form/Type
- Identifiers
- Target Audience

a. Population Concepts

Population concepts categorize and identify the group or individual studied by the document or intended as the users of the document (see also item "f," Target Audience). Most important to ERIC users are terms identifying the population's:

- Educational (Grade/Academic) Level;
- Age Level.

However, other categories that may be applicable are:

- Occupation;
- Race or Nationality;
- Religion;
- Intelligence or Ability Level;
- Physical or Emotional Characteristics;
- Socioeconomic Characteristics;
- Sex.

Educational Level must be indexed when appropriate (i.e., when dealt with by documents or journal articles). Age Level should be indexed for materials concerned strictly with age-level populations. Detailed instructions on use of these "Levelers" follow below. All other population concepts are treated just as any other concepts, and their use is up to the discretion of the indexer.

Examples of some terms in the *Thesaurus* that represent these various population concepts follow:

- Occupation - e.g.,

ACCOUNTANTS
COOKS
COUNSELORS
LIBRARIANS
MEDICAL LABORATORY ASSISTANTS
OPTOMETRISTS
TEACHERS

Note: See also-- (a) list of Narrower Terms under term OCCUPATIONS, and (b) the Descriptor Group "OCCUPATIONS."

- Race/Nationality - e.g.,

AMERICAN INDIANS	JAPANESE AMERICANS
ARABS	KOREAN AMERICANS
BLACKS	LATIN AMERICANS
CHINESE AMERICANS	MEXICAN AMERICANS
CUBANS	MEXICANS
ESKIMOS	NORTH AMERICANS
FILIPINO AMERICANS	POLISH AMERICANS
HISPANIC AMERICANS	PUERTO RICANS
INDIANS	SPANISH AMERICANS
ITALIAN AMERICANS	WHITES

- Religion - e.g.,

AMISH	JEWS
CATHOLICS	JUDAISM
CHRISTIANITY	PROTESTANTS
ISLAMIC CULTURE	PURITANS

- Intelligence/Ability Level - e.g.,

ACADEMICALLY GIFTED	ILLITERACY
DEVELOPMENTAL DISABILITIES	MENTAL RETARDATION
HIGH ACHIEVEMENT	SLOW LEARNERS
LEARNING DISABILITIES	TALENT

- Physical/Emotional Characteristics - e.g.,

AMPUTATIONS	HYPERACTIVITY
BLINDNESS	MENTAL DISORDERS
DEAFNESS	NEUROLOGICAL IMPAIRMENTS
DEAF BLIND	PARANOID BEHAVIOR
DOWNS SYNDROME	PERCEPTUAL HANDICAPS
DRUG ADDICTION	PHYSICAL DISABILITIES
EMOTIONAL DISTURBANCES	PSYCHOSIS
HOSTILITY	SCHIZOPHRENIA

- Socioeconomic Characteristics - e.g.,

ADOPTED CHILDREN	FOSTER CHILDREN
ADVANTAGED	MIGRANTS
CRIMINALS	NOMADS
DELINQUENCY	PRISONERS
ECONOMICALLY DISADVANTAGED	REFUGEES
EDUCATIONALLY DISADVANTAGED	

- Sex - e.g.,

EMPLOYED WOMEN	MALES
FATHERS	MOTHERS
FEMALES	

(1) **Educational (Grade/Academic) Level**

Many Descriptors in the ERIC *Thesaurus* can be used to identify the educational level being studied or the educational level toward which a document or article is directed. (See **Figure VII-1** for a relatively complete list.)

Any of the terms appearing in **Figure VII-1** may be used to index a document to the specific educational level with which it deals. Because of the extreme importance of this particular indexing to the retrieval process, however, and because of the large number of terms available to the indexer, a special attempt is made, with the following guidelines, to reduce "scattering."

Fourteen (14) broad Descriptors in this group have been specially identified or defined as subsuming several of the more specific terms. These broad Descriptors and their definitions appear in **Figure VII-2**. One or more of these special Descriptors must always be used to index educational level when the document deals with such levels. To assure assigning of an educational level Descriptor when appropriate, indexers are encouraged to select the educational level term first, before further indexing.

An educational level term of major or minor status should be on every document except in cases of:

- Documents where educational level is incidental and not specifically treated.
- Documents that apply to any or all educational levels equally.

The educational level term should be majored only when the central focus of the document is on the subject of that educational level. (See discussion of Major/Minor terms in **Section VII.I.5.b.**)

An occasional document will need to carry multiple educational levelers. For example, a document on Catholic schools having considerable statistical data for both K-12 schools and institutions of higher education should be indexed by ELEMENTARY SECONDARY EDUCATION and HIGHER EDUCATION. For the vast majority of documents, however, it is appropriate to assign only one educational leveler.

Note that there is a "broader-narrower" relationship between some of the 14 broad level Descriptors (not corresponding exactly to the strict hierarchical relationships of the ERIC *Thesaurus*). The use of a narrower term would, of course, obviate the need to also use its broader term, and vice versa. For example, a document indexed by PRESCHOOL EDUCATION need not also be indexed by EARLY CHILDHOOD EDUCATION. (See discussion on indexing specificity in **Section VII.I.5.a.**)

ADULT BASIC EDUCATION
ADULT EDUCATION
ADULT PROGRAMS
COLLEGE BOUND STUDENTS
COLLEGE CURRICULUM
COLLEGE FRESHMEN
COLLEGE GRADUATES
COLLEGE INSTRUCTION
COLLEGE PREPARATION
COLLEGE PROGRAMS
COLLEGE SENIORS
COLLEGE STUDENTS
COLLEGES
COMMUNITY COLLEGES
DOCTORAL PROGRAMS
EARLY CHILDHOOD EDUCATION
ELEMENTARY EDUCATION
ELEMENTARY SCHOOL CURRICULUM
ELEMENTARY SCHOOL STUDENTS
ELEMENTARY SCHOOLS
ELEMENTARY SECONDARY EDUCATION
EXTERNAL DEGREE PROGRAMS
GRADE 1
GRADE 2
GRADE 3
GRADE 4
GRADE 5
GRADE 6
GRADE 7
GRADE 8
GRADE 9
GRADE 10
GRADE 11
GRADE 12
GRADUATE STUDENTS
GRADUATE STUDY
HIGH SCHOOL EQUIVALENCY PROGRAMS
HIGH SCHOOL FRESHMEN
HIGH SCHOOL GRADUATES
HIGH SCHOOL SENIORS
HIGH SCHOOL STUDENTS
HIGH SCHOOLS
HIGHER EDUCATION
INSERVICE EDUCATION
INTERMEDIATE GRADES
JUNIOR HIGH SCHOOL STUDENTS
JUNIOR HIGH SCHOOLS
KINDERGARTEN
KINDERGARTEN CHILDREN
MASTERS PROGRAMS
MIDDLE SCHOOLS (= Grades 4-9 or some segment thereof)
NONCOLLEGE BOUND STUDENTS
NURSERY SCHOOLS
POSTDOCTORAL EDUCATION
POSTSECONDARY EDUCATION
PRESCHOOL CHILDREN
PRESCHOOL CURRICULUM
PRESCHOOL EDUCATION
PRIMARY EDUCATION
PROFESSIONAL EDUCATION
SECONDARY EDUCATION
SECONDARY SCHOOL CURRICULUM
SECONDARY SCHOOL STUDENTS
SECONDARY SCHOOLS
SPECIAL DEGREE PROGRAMS
TWO YEAR COLLEGE STUDENTS
TWO YEAR COLLEGES
UNDERGRADUATE STUDENTS
UNDERGRADUATE STUDY
UNIVERSITIES
UPPER DIVISION COLLEGES

FIGURE VII-1: EDUCATIONAL LEVEL DESCRIPTORS — COMPLETE LIST

- **EARLY CHILDHOOD EDUCATION**
  Scope Note: Activities and/or experiences that are intended to effect developmental changes in children, from birth through the primary units of elementary school (grades K-3).

  - **PRESCHOOL EDUCATION**
    Scope Note: Activities and/or experiences that are intended to effect developmental changes in children, from birth to entrance in kindergarten (or grade 1 when kindergarten is not attended).

  - **PRIMARY EDUCATION**
    Scope Note: Education provided in kindergarten through grade 3.

- **ELEMENTARY SECONDARY EDUCATION**
  Scope Note: Formal education provided in kindergarten or grade 1 through grade 12.

  - **ELEMENTARY EDUCATION**
    Scope Note: Education provided in kindergarten or grade 1 through grade 6, 7, or 8.

    - **ADULT BASIC EDUCATION**
      Scope Note: Education provided for adults at the elementary level (through grade 8), usually with emphasis on communicative, computational, and social skills.

    - **PRIMARY EDUCATION**
      Scope Note: (See above.)

    - **INTERMEDIATE GRADES**
      Scope Note: Includes the middle and/or upper elementary grades, but usually 4, 5, and 6.

  - **SECONDARY EDUCATION**
    Scope Note: Education provided in grade 7, 8, or 9 through grade 12.

    - **JUNIOR HIGH SCHOOLS**
      Scope Note: Providing formal education in grades 7, 8, and 9 -- less commonly 7 and 8, or 8 and 9.

    - **HIGH SCHOOLS** *(Changed from "Senior High Schools" in March 1980.)*
      Scope Note: Providing formal education in grades 9 or 10 through 12.

    - **HIGH SCHOOL EQUIVALENCY PROGRAMS**
      Scope Note: Adult educational activities concerned with the preparation for and the taking of tests which lead to a high school equivalency certificate, e.g., General Educational Development program.

- **POSTSECONDARY EDUCATION**
  Scope Note: All education beyond the secondary level -- includes learning activities and experiences beyond the compulsory school attendance age, with the exception of adult basic education and high school equivalency programs. (Before APR75, restricted to "education beyond grade 12 and less than the baccalaureate level.")

  - **HIGHER EDUCATION**
    Scope Note: All education beyond the secondary level leading to a formal degree.

  - **TWO YEAR COLLEGES** *(Changed from "Junior Colleges" in March 1980.)*
    Scope Note: Public or private postsecondary institutions providing at least 2, but less than 4, years of academic and/or occupational education.

FIGURE VII-2: MANDATORY "EDUCATIONAL LEVEL" DESCRIPTORS

(Procedure implemented February 1975)

Other Descriptors, which may be similar in form and meaning to any of the 14 broad level Descriptors, should not be used as educational level Descriptors per se. They may, however, be used for other indexing applications. For example:

Mandatory Terms for Indexing Educational Level	Closely Related Terms
PRESCHOOL EDUCATION	PRESCHOOL CURRICULUM
ELEMENTARY EDUCATION	ELEMENTARY SCHOOLS
JUNIOR HIGH SCHOOLS	JUNIOR HIGH SCHOOL STUDENTS

Chronological age may often be used in determining the educational level of a population group. For instance, if 5-9 year olds represent the target population of a study, the indexer can assume (unless the document or article describing the study indicates otherwise) that the educational level is "grades K-3" or PRIMARY EDUCATION.

NOTE-- There are cases where grade and age level correspondence would not hold true:

- mentally handicapped persons whose chronological ages and mental ages do not match.
- gifted persons whose mental age is above their normal age-grade placement.
- persons of compulsory school age who have been excused from attending school.

Hopefully, the educational level of these groups would be specified in the document or article because the indexer could not assume educational level strictly on the basis of age level. In most instances, however, age level may be used to determine educational level. (See conversion list displayed in **Figure VII-3.**)

Grade-level ranges may also, like age, be used to determine the appropriate educational level Descriptor to use. (See **Figure VII-4.**)

The indexer should not confuse the intermediate or middle grades with the so-called "middle school level." The concept "middle school" has never been standardized and should not be used as an educational level term. Usually thought of as a replacement for the junior high school level, the most commonly agreed-upon "middle-school" grade-level ranges are:

CHRONOLOGICAL AGE	CORRESPONDING BROAD EDUCATIONAL LEVEL DESCRIPTOR
0-9	EARLY CHILDHOOD EDUCATION
0-5,6	PRESCHOOL EDUCATION
5-9	PRIMARY EDUCATION
5-12,13,14	ELEMENTARY EDUCATION
5-18	ELEMENTARY SECONDARY EDUCATION
9-12,13,14	INTERMEDIATE GRADES
12,13,14-18	SECONDARY EDUCATION
12-15	JUNIOR HIGH SCHOOLS
14,15-18	HIGH SCHOOLS
Adult	ADULT BASIC EDUCATION
Adult	HIGH SCHOOL EQUIVALENCY PROGRAMS
Adult	POSTSECONDARY EDUCATION
Adult	HIGHER EDUCATION
Adult	TWO YEAR COLLEGES

FIGURE VII-3
CHRONOLOGICAL AGE TO EDUCATIONAL LEVEL CROSS-REFERENCE TABLE

GRADE LEVEL	CORRESPONDING BROAD EDUCATIONAL LEVEL DESCRIPTOR
K-12	ELEMENTARY SECONDARY EDUCATION
K-8, 1-6, 1-8	ELEMENTARY EDUCATION
1-3	PRIMARY EDUCATION
4-6, 5-8	INTERMEDIATE GRADES
6-8, 7-8, 7-9, 7-10	JUNIOR HIGH SCHOOLS
9-12, 10-12	HIGH SCHOOLS
*13-14, 14-16, 15-16	HIGHER EDUCATION

*When appropriate, use TWO YEAR COLLEGES for grade level range 13-14.

FIGURE VII-4
GRADE LEVEL TO EDUCATIONAL LEVEL CROSS-REFERENCE TABLE

- 7-8 and
- 6-8,

but other possible ranges include:

- 4-7,
- 5-8,
- 6-9, and
- 7-9.

Thus, the Descriptor MIDDLE SCHOOLS should be used as an index term only when the document or article itself uses it, and only with an appropriate educational level Descriptor.

It is worth noting that the term ADULT EDUCATION was not included in the list of broad educational level Descriptors precisely because it does not discriminate this factor; it may overlap the elementary (adult basic), secondary (high school equivalency), and postsecondary levels. Documents on "lifelong" and/or "adult" education (excluding the educational leveler ADULT BASIC EDUCATION) do not necessarily require an educational level Descriptor. It is assumed that such documents would be indexed by LIFELONG LEARNING, ADULT EDUCATION, or a narrower term in the ADULT EDUCATION hierarchy.

The following examples are intended to show some typical situations that the indexer might face in indexing by educational level...

- EXAMPLE 1:

A document on *Enrollment Patterns at Prince George's Community College* might be indexed:

DESCRIPTORS: ASSOCIATE DEGREES; *COMMUNITY COLLEGES; ENROLLMENT, ENROLLMENT RATE; *ENROLLMENT TRENDS; TWO YEAR COLLEGES; *TWO YEAR COLLEGE STUDENTS; etc.

IDENTIFIERS: PRINCE GEORGES COMMUNITY COLLEGE MD; etc.

Prince George's Community College is a 2-year institution with terminal occupational and bachelor's creditable programs. COMMUNITY COLLEGES should be included as a major Descriptor because of its specificity, but accompanied by the leveling term TWO YEAR COLLEGES as a minor entry.

- EXAMPLE 2:

A document on *Teaching About Africa—Social Studies Activities for Seventh Graders* might be indexed:

DESCRIPTORS: *AFRICAN CULTURE; *GRADE 7; JUNIOR HIGH SCHOOLS; *SOCIAL STUDIES; TEACHING METHODS; UNITS OF STUDY; etc.

IDENTIFIERS: *AFRICA; etc.

The leveling term JUNIOR HIGH SCHOOLS is added as a minor Descriptor complementing the major and more specific Descriptor GRADE 7. Although overlapping between the general concepts of ELEMENTARY EDUCATION and SECONDARY EDUCATION, GRADE 7 (also GRADE 8) would normally be used with JUNIOR HIGH SCHOOLS, unless such indexing would mislead users.

- EXAMPLE 3:

  An article on *Evaluation of Arithmetic Units in Grades 3, 5, and 7* might be indexed:

  DESCRIPTORS: *ARITHMETIC; *CURRICULUM EVALUATION; ELEMENTARY EDUCATION; *ELEMENTARY SCHOOL MATHEMATICS; GRADE 3; GRADE 5; GRADE 7; etc.

  Although ELEMENTARY EDUCATION is included as the leveling term, ELEMENTARY SCHOOL MATHEMATICS is asterisked (made Major) because of its specificity. The specific grade terms are added as an indexing option; in this case, they are not asterisked, as the author of the article indicates general transferability of his conclusions to arithmetic units in grades 4 and 6.

- EXAMPLE 4:

  A document on *Differential Diagnostic Evaluations of Aurally Disabled Children in Grades K-6, With Emphasis on Kindergarten Children to Allow Major Corrective Measures Prior to Entry into First Grade* might be indexed:

  DESCRIPTORS: *AUDITORY EVALUATION; DIAGNOSTIC TESTS; ELEMENTARY EDUCATION; *ELEMENTARY SCHOOL STUDENTS; *HEARING IMPAIRMENTS; KINDERGARTEN CHILDREN; etc.

  ELEMENTARY EDUCATION is the leveling term corresponding to grades K-6. ELEMENTARY SCHOOL STUDENTS is starred (made Major) because of its specificity. KINDERGARTEN CHILDREN is included as a minor term because of the particular emphasis at this level.

- EXAMPLE 5:

  An article on *New Curricula for Preparing Educational Administrators—Providing Leadership for the 1990-1995 Public Schools* might be indexed:

  DESCRIPTORS: *ADMINISTRATOR EDUCATION; *CURRICULUM DEVELOPMENT; *EDUCATIONAL ADMINISTRATION; EDUCATIONAL NEEDS; ELEMENTARY SECONDARY EDUCATION; HIGHER EDUCATION; PUBLIC SCHOOLS; etc.

  Two leveling terms, HIGHER EDUCATION and ELEMENTARY SECONDARY EDUCATION, are used. The former covers the level of training discussed in the article; the latter covers the educational level of the ultimate target group.

- EXAMPLE 6:

  A document on *Preparing Teachers, Students, and Citizens to Deal with the Problems and Potentialities of the Aged* might be indexed:

  DESCRIPTORS: *GERONTOLOGY; POSTSECONDARY EDUCATION; etc.

POSTSECONDARY EDUCATION sufficiently covers the educational level here. HIGHER EDUCATION would not be indexed unless the document covered training programs leading to a formal degree. ADULT EDUCATION is too broad and, therefore, not used.

Note the absence of the Descriptor OLDER ADULTS. The post-coordination of OLDER ADULTS and POSTSECONDARY EDUCATION would most likely be used for education *for*, rather than *about*, older adults, in which case, this document would be a false drop.

- EXAMPLE 7:

  A document on *Establishing a Language Laboratory to Teach English to Non-English Speaking, Inner City Youth to Help to Overcome Linguistic and Cultural Handicaps* might be indexed:

  DESCRIPTORS: *DISADVANTAGED YOUTH; *ENGLISH (SECOND LANGUAGE); *LANGUAGE LABORATORIES; *NON ENGLISH SPEAKING; SECOND LANGUAGE INSTRUCTION; etc.

  Though designation of educational level might be applicable in this case, none could be indexed without further information.

- EXAMPLE 8:

  An article on *The Influence of Teachers on Religious Beliefs and Moral Values* might be indexed:

  DESCRIPTORS: EDUCATIONAL OBJECTIVES; *MORAL VALUES; *RELIGION; RELIGIOUS EDUCATION; TEACHER ATTITUDES; *TEACHER INFLUENCE; *TEACHER STUDENT RELATIONSHIP; etc.

  Educational level does not appear to be applicable in this case. The material appears to be open to all levels.

- EXAMPLE 9:

  An article on *Government and Academia: The Federal Government's Increasing Role in Higher Education* might be indexed:

  DESCRIPTORS: ACADEMIC FREEDOM; COMPLIANCE (LEGAL); *FEDERAL REGULATION; GOVERNMENT ROLE; *GOVERNMENT SCHOOL RELATIONSHIP; *HIGHER EDUCATION; INSTITUTIONAL AUTONOMY; etc.

  Here, unlike any of the preceding examples, the educational leveler is made a major Descriptor. HIGHER EDUCATION, in consideration of other related Descriptors, provides adequate precision in regard to this article's subject.

★See additional examples and reminders regarding the mandatory education levelers under "Leveling" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

(3) **Age Level**

The fifteen (15) Descriptors listed in **Figure VII-5** are used to index age level in the ERIC system. Each covers a specific age range. One or more of these Descriptors should be posted to ERIC documents or journal articles concerned strictly with age-level groups or populations. However, note that the use of specific terms in indexing such as ADOPTED CHILDREN and ADULT DROPOUTS obviates the need to also index generic age levelers such as CHILDREN and ADULTS.

Unlike educational levelers, age-level Descriptors are not to be considered "mandatory." Appropriate mandatory educational levelers must always be considered first and be given precedence over age levelers. For instance, a document properly indexed with EARLY CHILDHOOD EDUCATION (mandatory educational leveler) would not usually carry the age leveler YOUNG CHILDREN, unless a subset of the total population with which the document is concerned falls outside the scope of early childhood education. (In other words, the use of YOUNG CHILDREN would be appropriate if a part of the subject population is not adequately conveyed by the activities and experiences with which early childhood education is normally concerned.)

AGE LEVEL DESCRIPTORS (age ranges are approximations)	
NEONATES Aged birth to 1 month.	YOUNG ADULTS Aged 18 through 30 years.
INFANTS Aged birth to 24 months.	ADULTS Aged 18 years and over.
YOUNG CHILDREN Aged birth through 8 years.	ADULTS (30 TO 45) Aged between 30 and 45 years.
CHILDREN Aged birth through 12 years.	MIDDLE AGED ADULTS Aged 45 through 64 years.
TODDLERS Aged 1 through 3 years.	YOUNG OLD ADULTS Aged 65 through 75 years.
PRESCHOOL CHILDREN Aged 2 through 5 years.	OLDER ADULTS Aged 65 years and over.
PREADOLESCENTS Aged 9 through 12 years.	OLD OLD ADULTS Aged 75 years and over.
ADOLESCENTS Aged 13 through 17 years.	

FIGURE VII-5: "AGE LEVEL" DESCRIPTORS

b. Action Concepts and Materials Concepts

Activities or action concepts include such terms as:

- Instruction;
- Testing;
- Experiments, etc.

Methodology and materials concepts include such terms as:

- Language Laboratories;
- Objective Tests;
- Filmstrips, etc.

Often a decision must be made as to whether the document is about the activity, about the materials, or about both. (In certain instances, the activity and the methodology might be essentially the same.)

For example, if a document is about testing, making only slight mention of methods and specific tests, then it should be indexed by TESTING. However, do not use TESTING when more precise Descriptors are available (MINIMUM COMPETENCY TESTING, TESTING PROGRAMS, etc.).

If it is about the development or use of a specific kind of test (i.e., aptitude tests), then it should be indexed by APTITUDE TESTS, not by TESTING.

If, however, the document is about testing, and various aptitude tests were used, it should be indexed by TESTING (or a more precise "testing" term), by APTITUDE TESTS, and by the names (Identifiers) of the specific aptitude tests for which data and results were presented.

★See additional reminders under "Methodology" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

c. Curriculum Concepts

This refers to the educational subject or concept that is being administered, taught, or measured. Examples are:

- Arithmetic;
- History;
- Learning Disabilities;
- Reading;
- Spatial Ability, etc.

Those concepts that are actively and substantially treated by the document are indexable. For example, if a teaching method is used for arithmetic and this is reported and described in detail, then the document should be indexed by ARITHMETIC, along with terms describing the method, the persons being

taught, etc. However, if the document mentions that this method might also be used for teaching music, but does not describe this use of the method, then the document should not be indexed by MUSIC.

d. Document Form/Type

It is a valid indexing concern to wish to record and store the information describing whether a document is a textbook, curriculum guide, dissertation, or other well-known form. Use of such specific information can often aid retrieval. For example, a search for textbooks on mathematics for adults probably would not wish to retrieve documents dealing with textbook writing. The former can be indexed by TEXTBOOKS; the latter by TEXTBOOK PREPARATION.

Similarly, specific curriculum guides can be distinguished from the act of curriculum preparation by using the Descriptors CURRICULUM GUIDES and CURRICULUM DEVELOPMENT, respectively. Not all situations can be handled in this manner, and it may be necessary to rely on coordination of index terms to distinguish concepts.

From ERIC's beginning in 1966 through mid-1974, the only way to index by document/publication form or type was via Descriptors or Identifiers. In mid-1974 the "Publication Type" data element was added to the ERIC Resume Form, and catalogers began routinely tagging each and every accession with a code representing its form (see **Figure VII-6**).

With the inception of this new cataloging element (which is machine manipulable and can be searched or made to print out with each resume), it becomes necessary to coordinate the assignment of the PUBTYPE code with the assignment of Descriptors that can represent form.

Many Descriptors can be used for tagging publication types. A fairly comprehensive list appears in the cataloging rules pertaining to PUBTYPE and is repeated here as **Figure VII-8**. There are twenty-two (22) Descriptors that are not used for this purpose, however, because such use would essentially duplicate the coding of the PUBTYPE field. Each of these 22 terms carries the following note in the *Thesaurus*: "CORRESPONDS TO PUBTYPE CODE XXX---DO NOT USE EXCEPT AS THE SUBJECT OF A DOCUMENT." These 22 Descriptors and their corresponding PUBTYPE codes are listed in **Figure VII-7**.

All other Descriptors that represent form (e.g., DIARIES) should generally be used in indexing as minor Descriptors. Only when representing the subject of the document in hand should they be used as major Descriptors.

★See additional examples and reminders under "Pubtype" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

CODE	PUBLICATION/DOCUMENT TYPES
010	BOOKS
	COLLECTED WORKS
020	---General
021	---Conference Proceedings
022	---Serials
030	CREATIVE WORKS (Literature, Drama, Fine Arts)
	DISSERTATIONS/THESES
040	---Undetermined
041	---Doctoral Dissertations
042	---Masters Theses
043	---Practicum Papers
	GUIDES
050	---General (use more specific code, if possible)
	---Classroom Use
051	---Instructional Materials (For Learner)
052	---Teaching Guides (For Teacher)
055	---Non-Classroom Use (For Administrative and Support Staff, and for Teachers, Parents, Clergy, Researchers, Counselors, etc., in Non-Classroom Situations)
060	HISTORICAL MATERIALS
070	INFORMATION ANALYSES (State-of-the-Art Papers, Research Summaries, Reviews of Literature on a Topic)
071	---ERIC Information Analysis Products (IAPs)
072	---Book/Product Reviews
073	---ERIC Digests (Selected) in Full Text
080	JOURNAL ARTICLES
090	LEGAL/LEGISLATIVE/REGULATORY MATERIALS
100	AUDIOVISUAL/NONPRINT MATERIALS
101	---Computer Programs
102	---Machine-Readable Data Files (MRDFs)
110	STATISTICAL DATA (Numerical, Quantitative, etc.)
120	VIEWPOINTS (Opinion Papers, Position Papers, Essays, etc.)
	REFERENCE MATERIALS
130	---General (use more specific code, if possible)
131	---Bibliographies/Annotated Bibliographies
132	---Directories/Catalogs
133	---Geographic Materials/Maps
134	---Vocabularies/Classifications/Dictionaries
	REPORTS
140	---General (use more specific code, if possible)
141	---Descriptive (i.e., Project Descriptions)
142	---Evaluative/Feasibility
143	---Research/Technical
150	SPEECHES, CONFERENCE PAPERS
160	TESTS, EVALUATION INSTRUMENTS
170	TRANSLATIONS
171	---Multilingual/Bilingual Materials

FIGURE VII-6:

PUBLICATION/DOCUMENT TYPES

DESCRIPTORS CORRESPONDING TO PUBLICATION TYPE CATEGORIES	
DESCRIPTOR	**PUBTYPE CODE**
AUDIOVISUAL AIDS	100
BIBLIOGRAPHIES	131
BOOKS	010
COMPUTER SOFTWARE	101
CONFERENCE PAPERS	150
CONFERENCE PROCEEDINGS	021
DICTIONARIES	134
DIRECTORIES	132
DOCTORAL DISSERTATIONS	041
GUIDES	050
MASTERS THESES	042
MULTILINGUAL MATERIALS	171
PRACTICUM PAPERS	043
REFERENCE MATERIALS	130
REPORTS	140
RESEARCH REPORTS	143
SERIALS	022
SPEECHES	150
STATISTICAL DATA	110
TESTS	160
THESES	040
VOCABULARY	134

FIGURE VII-7:

DESCRIPTORS CORRESPONDING TO PUBLICATION TYPE CATEGORIES

PUBLICATION TYPE	PUBTYPE CODE MOST APPLICABLE
Abstracts	131
Administrator Guides	055
Annotated Bibliographies	131
Annual Reports	141
Answer Keys	160
Answer Sheets	160
Anthologies	020
[Archival Documents]	060
Atlases	133
Audiodisks	100
Audiotape Recordings	100
★Audiovisual Aids	100
Autobiographies	060
★Bibliographies	131
[Bilingual Materials]	171
Biographical Inventories	060 (132)
Biographies	060
[Booklists]	131
★Books	010
Book Reviews	072
Bulletins	022
[Bylaws]	090
Cartoons	100 (030)
Case Records [or] Case Studies	141 or 143 or 140
Catalogs	132
Charts	100
Check Lists	130 or 160
[Childrens Books]	010 and 030
Childrens Literature	030 (010)
Chronicles	060 (020)
Citation Indexes	131
[Class Newspapers]	022
[Classroom Games]	051 (100)
[Classroom Materials]	051 or 052
Codes of Ethics	090
Comics (Publications)	030
Computer Output Microfilm	100
★Computer Software	101
Computer Software Reviews	072 (142)
[Concordances]	134
★Conference Papers	150
★Conference Proceedings	021

PUBLICATION TYPE	PUBTYPE CODE MOST APPLICABLE
[Conference Summaries]	021
Contracts	090
Course Descriptions	052 or 050 or 051
[Courtroom Transcripts]	090
[Creative Works]	030
Curriculum Guides	052 or 050 or 051
[Data Sheets]	110 or 130
Databases	102
Diagrams	100
Diaries	120 (060 or 030)
★Dictionaries	134
[Dictionary Catalogs]	131
★Directories	132
[Discipline Codes]	090
Discographies	131
★Doctoral Dissertations	041
Documentaries	100 (141)
Drama	030
Editorials	120
Encyclopedias	130
[ERIC Digests in Full Text]	073
[ERIC IAPs]	071
Essays	120 or 030
[Evaluation Studies]	142
Facility Guidelines	055
Faculty Handbooks	055
Feasibility Studies	142
Filmographies	131
Films	100
Filmstrips	100
Flow Charts	100
Foreign Language Books	010 (170)
Foreign Language Films	100 (170)
Foreign Language Periodicals	022 (170)
Games	030 or 100
Glossaries	134
Graphs	100
Guidelines	050 or 052 or 055
★Guides	050 or 051 or 052 or 055

FOOTNOTES:

1. All terms not in brackets have been selected from the ERIC *Thesaurus*.
2. Conventions
   - A or B = one or the other category is appropriate, depending on item.
   - A and B = two categories are appropriate.
   - A (B) = a second category might be appropriate, depending on item.
   - ★ = category and term are synonymous. Term should be used in Descriptor field only when it denotes subject matter.
3. These terms, like all other Descriptors identifying the form or type of a document, should be used as major Descriptors only when they represent the subject of the document in hand.

FIGURE VII-8: GUIDE FOR ASSIGNING PUBTYPE CODES (A CROSS-REFERENCE FROM SPECIFIC KINDS OF DOCUMENTS TO MOST APPLICABLE PUBLICATION TYPE CODE)

Page 1 of 3

[Bracketed terms are not Descriptors]

PUBLICATION TYPE	PUBTYPE CODE MOST APPLICABLE
Hearings	090
[Historical Reviews]	060
Illustrations	100
Indexes	130 or 131
[Information Analyses]	070 or 071
Instructional Materials	051
Interviews	120 or 160
Item Banks	160
[Journal Articles]	080
[Journals]	022
[Judicial Materials]	090
Kinescope Recordings	100
Laboratory Manuals	051
[Language Guides]	051 or 030 (170)
Large Type Materials	051
Leaders Guides	052
[Lecture]	150 (051)
[Legal Analysis]	090
Legislation	090
Lesson Plans	052
Letters (Correspondence)	030
[Literature Guides]	131
Literature Reviews	131 (070)
[Lobbying Papers]	090 and 120
Magnetic Tape Cassettes	100
Magnetic Tapes	100
[Manuals]	050 or 051 or 052 or 055
Maps	133
Master Plans	090
[Master Tapes (Audio)]	100
★Masters Theses	042
Matrices	100
Microforms	100
Models	100 or 143
★Multilingual Materials	171
[Musical Materials]	030
Negotiation Agreements	090
Newsletters	022
Newspapers	022
Nonprint Media	100
Opinions	120
[Oral History Transcripts]	060

PUBLICATION TYPE	PUBTYPE CODE MOST APPLICABLE
Pamphlets	Document Dependent
[Parent Guides]	055
Patents	090
Periodicals	022
Permuted Indexes	130 or 131
Personal Narratives	060 or 120
[Phonograph Records]	100
Photographs	100
Poetry	030
Position Papers	120
★Practicum Papers	043
Program Descriptions	141
Program Evaluation	142
Program Guides	141
Program Proposals	141
[Programed Texts]	010 and 051
Puzzles	030 or 100
Questionnaires	160
Rating Scales	160
[Recommendations]	120
Records (Forms)	Document Dependent
★Reference Materials	130 (010)
[Regulations]	090
★Reports	140
[Research Methodology Guides]	055
Research Proposals	143
★Research Reports	143
[Research Reviews (Publications)]	070
Resource Materials	050 or 051 or 052 or 055
Scholarly Journals	022
School Newspapers	022
School Publications	Document Dependent
Scripts	030
★Serials	022
Short Stories	030
Slides	100
Specifications	090
★Speeches	150
Standards	090
State of the Art Reviews	070
★Statistical Data	110
Student Journals	120 (030)
Student Publications	Document Dependent
Study Guides	051

FIGURE VII-8: GUIDE FOR ASSIGNING PUBTYPE CODES (A CROSS-REFERENCE FROM SPECIFIC KINDS OF DOCUMENTS TO MOST APPLICABLE PUBLICATION TYPE CODE)

Page 2 of 3
(see explanatory footnotes on first page)

[Bracketed terms are not Descriptors]

PUBLICATION TYPE	PUBTYPE CODE MOST APPLICABLE
Surveys	160 or 143
Tables (Data)	110
Talking Books	100
Tape Recordings	100
[Taxonomy]	134
Teaching Guides	052
[Technical Reports]	143
Test Reviews	072 (142)
★Tests	160
Textbooks	010 and 051
Thesauri	134
★Theses	040
[Transcripts (Interview)]	120
[Transcripts (Legal)]	090
[Transcripts (Oral History)]	060
Videodisks	100
Videotape Recordings	100
★Vocabulary	134
Word Lists	134
Workbooks	051
Worksheets	051
Yearbooks	141 (022)

FIGURE VII-8: GUIDE FOR ASSIGNING PUBTYPE CODES (A CROSS-REFERENCE FROM SPECIFIC KINDS OF DOCUMENTS TO MOST APPLICABLE PUBLICATION TYPE CODE)

Page 3 of 3
(see explanatory footnotes on first page)

[Bracketed terms are not Descriptors]

****

e. **Identifiers**

Frequently a part of a document's indexable information are:

- proper names of persons;
- geographic locations;
- proper names of organizations;
- projects, etc.

These highly specific terms (varied and often transient) usually are not appropriate for the *Thesaurus*. Nevertheless, they can be highly useful access points for the users and must be taken into account in the indexing process. The ERIC solution to this problem is to create a relatively "free" and open subject indexing field called the Identifier field.

Identifiers are not rigidly defined, structured, or controlled as are Descriptors; however, in order to avoid excessive scattering under different word forms, and to aid retrieval, certain standards are observed in their construction.

The *Identifier Authority List* (IAL) should be consulted to determine the proper format for all existing Identifier concepts. The various categories of Identifiers and the rules for the construction of new Identifiers are covered in detail in Section VIII (Part 2). The existing categories of Identifiers are:

- Conferences/Meetings;
- Curriculum Areas;
- Equipment (including Computer Programs);
- Facilities;
- Geographic Locations;
- Groups (Ethnic);
- Groups (Occupations);
- Groups (Other);
- Health-Related Terms (including Psychology);
- Historical/Special Events;
- Languages/Linguistics;
- Laws/Legislation;
- Methods/Theories;
- Miscellaneous;
- Organizations;
- Personal Names;
- Projects/Programs;
- Science & Technology;
- Tests/Testing;
- Titles (Literature, Films, etc.)

In addition to specific entities, Identifiers may consist of more general concepts that have been introduced in the ERIC literature but not yet added to the *Thesaurus*. *Candidate Descriptors, awaiting approval for admission to the Thesaurus are always "posted" in the ERIC system as Identifiers.*

Selection of Identifiers should be made on the same basis as selection of Descriptors. The Identifier should be considered indexable information if the document contains significant and substantial enough information on the Identifier, *as a subject*, to justify later retrieval. To provide some examples:

- A document on investigations of chaos (nonlinear systems) theory relative to educational phenomena might not be concerned *per se* with the theory itself. However, the inclusion of CHAOS THEORY as an Identifier would undoubtedly be justified because of the interest of researchers in isolating the various applications of the theory.

- A statistical study that happened to run its data on IBM PC compatible computers should not necessarily be indexed by the Identifier IBM PC COMPATIBLES insofar as the type of computer system used may be completely incidental to the study results.

- A paper dealing with unemployment among female teachers in New England should be indexed by the geographic Identifier NEW ENGLAND. New England is not the main topic *per se*, but the area of a country inhabited by subjects of a study can be crucial to the meaning and usage of the document and the results reported.

- A history, or a report of current activities, of the National Science Foundation should be indexed by the Identifier NATIONAL SCIENCE FOUNDATION, even if the report is published by the agency and it appears as the institutional source. The former indexing indicates subject matter; the latter indicates the responsible preparing body. These are two different involvements.

Identifiers appear in the Document Description (Resume) section of *Resources in Education* and in the Main Entry section of *Current Index to Journals in Education*, and those that are asterisked as Major terms appear in the printed subject indexes. There is no minimum requirement for Identifiers. No more than

two major Identifiers may be designated when there are five or fewer major Descriptors; only one major Identifier is permitted if there are six (the maximum) major Descriptors.

★See additional examples and reminders under "Identifiers" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

f. Target Audience

Although target or intended audience is *not* a document "subject," the recognition of audience is a necessary ingredient of the subject indexing process (whose most basic tenet is relevance to the user). ERIC indexes or catalogs Target Audience in a separate data element or field (separate from the Descriptors and Identifiers). *The field is used when an author clearly specifies an intended audience (approximately 25% of current ERIC input); otherwise, it is left blank.*

ERIC defines eleven distinct audience groups, which are listed in **Figure VII-9**. The ERIC computer system automatically adds the generic audience "Practitioners" to records cataloged by any of the five "practitioner" sub-categories. Several audiences from the prescribed list in **Figure VII-9** may be cataloged for individual records, within an overall 80-character field length; however, if more than two practitioner groups are identified, only the generic "Practitioners" should be cataloged.

Target Audience became a fully defined cataloging element for RIE in January 1984 and for CIJE in September 1984. There are some retrospective RIE postings of "Practitioners" and "Students."

Target Audience is used in computer searching as a precise "limiter." Its presence in a record assumes restrictiveness and exclusion of relevance for groups not present. Target Audience does not appear in the printed RIE and CIJE abstract journals.

★For the complete discussion of Target Audience, see Section V under the data element "Audience"; see also additional reminders under "Target Audience" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].

4. Translation and Negotiation (Indexable Concepts into Approved Terminology)

a. Use of an Exact Equivalent, Synonym, Broader Term, Narrower Term, or Two Terms Coordinated

The concepts that have been listed (in the author's or indexer's terminology) as possible Descriptors must be translated into the language of the *Thesaurus*. Each concept must be compared with terms in the *Thesaurus* to determine:

TARGET AUDIENCE

Educational documents and journal articles are sometimes written for particular audiences. ERIC currently identifies these audiences in a special "Target Audience" field (data element). The field is used when an author clearly specifies an intended audience; otherwise, it is left blank. For consistency, eleven (11) distinct audiences have been defined by ERIC, as follows:

- **Policymakers**
- **Researchers**
- **Practitioners***
  - **Administrators**
  - **Teachers**
  - **Counselors**
  - **Media Staff**
  - **Support Staff**
- **Students**
- **Parents**
- **Community**

**Note:* *The ERIC computer system automatically adds the generic audience "Practitioners" to records cataloged by any of the five "practitioner" sub-categories.*

FIGURE VII-9: "TARGET AUDIENCE" GROUPS

- whether an exact equivalent exists;
- whether a synonym (or near synonym) exists;
- whether a Broader Term in the *Thesaurus* is adequate for retrieval of the concept;
- whether two or more different existing terms in the *Thesaurus* can be coordinated for retrieval of the concept;
- whether it is an existing Identifier; or
- whether it is necessary to introduce a new term to the Identifier field in order to cover the concept.

As the indexer attempts to locate applicable terms, the latest editions of the *Thesaurus* and *Identifier Authority List* (Alphabetical Displays) should be used, together with any supplements issued by the Facility since the last editions. The supplementary rotated and hierarchical *Thesaurus* displays and the IAL category display, described in Section VII.H.1-2 on "Indexing Tools," should be used as needed, but not in lieu of the main Alphabetical Displays.

Application of the translation process can best be shown through the use of examples. Let us say that a document reports *"Research on the influences of various factors on the sex role development of 3-to-5-year old preschool children enrolled in a preschool program."* Factors examined were:

- personal traits of the preschoolers (and of their brothers and sisters);
- the "only" child situation;
- intelligence;
- attitudes of parents;
- socioeconomic status;
- type of preschool program; and
- the influence of classmates.

A test to measure each child's intelligence was administered. Several sex role tests were also administered to each child, and two of these, the Draw-a-Person Test and the Toy Preference Test, were discussed in detail and partially reproduced in the document. Procedures surrounding administration of the tests are discussed.

Indexable concepts of the document described seem to be as follows:

PRESCHOOL PROGRAMS	PERSONAL TRAITS
PRESCHOOLERS	SOCIOECONOMIC STATUS
SEX ROLE	INTELLIGENCE
BROTHERS AND SISTERS	SEX ROLE TESTS
ONLY CHILD	TEST ADMINISTRATION
INFLUENCE OF CLASSMATES	DRAW-A-PERSON TEST
ATTITUDES OF PARENTS	TOY PREFERENCE TEST

Taking these terms one at a time:

- ERIC indexers are counseled to index educational level first, and since PRESCHOOL EDUCATION is one of the 14 mandatory educational-level Descriptors, it makes sense to start with the terms beginning with "Preschool..." The children in the study are identified as being enrolled in a preschool program, which is in turn one of the factors studied. "Preschool Programs" is no longer a *Thesaurus* term, but is listed in the *Thesaurus* with the note "Use PRESCHOOL EDUCATION." PRESCHOOL EDUCATION is chosen, therefore, as the initial indexing term for this document.

- Preschoolers are the subjects of the study. The concept "preschoolers" is listed in the *Thesaurus* with the instruction "Use PRESCHOOL CHILDREN." Look at the full display for that term. The Scope Note defines PRESCHOOL CHILDREN as "aged 2 through 5 years." PRESCHOOL CHILDREN can therefore be used to identify the population studied. In this case, USE A SYNONYM OR NEAR SYNONYM. This is in addition to the education-leveler PRESCHOOL EDUCATION, already selected to identify one of the factors studied.

- "Sex Role" appears as a term in the *Thesaurus*, so here USE THE EXACT EQUIVALENT, i.e., SEX ROLE.

- "Brothers and Sisters" are two concepts, and both appear in the *Thesaurus* with the instruction "Use SIBLINGS." Here again, USE A SYNONYM OR NEAR SYNONYM. There are no other appropriate terms in the display for SIBLINGS because they are either too narrow (TWINS) or not mentioned in the study (BIRTH ORDER).

- "Only Child" is not a *Thesaurus* term. Looking under "One Child Family," "Single Child," and "Single Child Family" meets with no success. Since there seems no way to express this concept with existing *Thesaurus* terms, the *Identifier Authority List* (IAL) is consulted. The preferred IAL format is "Only Children"; therefore, USE IT AS AN IDENTIFIER. Make a note of the circumstances for using the concept, because it could become a candidate for a new *Thesaurus* term.

- "Classmates" is nót a *Thesaurus* term. The term PEER INFLUENCE is listed in the Rotated Display under "Influence" or "Influences." This seems to get at the concept adequately, so USE A SYNONYM OR NEAR SYNONYM.

- "Attitudes of Parents" is not a *Thesaurus* term. A note under ATTITUDES in the *Thesaurus* recommends using a more specific term, if possible. PARENT ATTITUDES (found in the NTs) is the exact term needed. In this case, the BROADER TERM IN THE *THESAURUS* IS NOT ADEQUATE FOR RETRIEVAL, for although PARENTS and ATTITUDES could be post-coordinated, ATTITUDES could also be post-coordinated with any other population term such as SIBLINGS. Therefore, the precoordinated term PARENT ATTITUDES is preferable because it is more precise.

- "Personal Traits" does not appear in the *Thesaurus*, but PERSONALITY TRAITS does. The Scope Note seems to cover the concept expressed in the document. Look at INDIVIDUAL CHARACTERISTICS, which is mentioned in the Scope Note. INDIVIDUAL CHARACTERISTICS is scoped to include physical as well as psychological characteristics. PERSONALITY TRAITS is preferable because it is the more precise term. USE A SYNONYM OR NEAR SYNONYM in this case.

- "Socioeconomic Status" is another example of a concept with an EXACT EQUIVALENT in the *Thesaurus*.

- "Intelligence" is also a *Thesaurus* term. However, the terms INTELLIGENCE QUOTIENT and INTELLIGENCE TESTS are listed in the RT display, and the possibility exists that INTELLIGENCE is too broad. Since the document did not state that the test resulted in an intelligence quotient for each child, however, and since the test itself was not discussed in any detail, INTELLIGENCE, the BROADER TERM, IS PREFERABLE.

- "Sex Role Tests" is not a *Thesaurus* term. SEX ROLE alone is a valid Descriptor that was chosen previously in this exercise. It is possible, then, that either TESTS and TESTING could be post-coordinated with SEX ROLE. All three terms could be used for these reasons: TESTS because the tests are discussed in some detail and portions are reproduced in the document; and TESTING because the next concept on our list is "Test Administration," which is cross-referenced "Use TESTING." Thus TWO OR MORE TERMS ALREADY IN THE *THESAURUS* CAN BE COORDINATED FOR RETRIEVAL. However, because TESTS and TESTING are very broad terms (of little value in manual indexes and prone to cause "false drops" in computer searching), the *Thesaurus* is checked further for an appropriate narrower term (NT). The hierarchies of both TESTS and TESTING show a variety of possibilities, but PSYCHOLOGICAL TESTING appears to be the most appropriate concept as it is scoped broadly and is "used for" PSYCHOLOGICAL TESTS. Thus, ONE PRECOORDINATED NARROWER TERM IS CHOSEN TO REPLACE THE TWO BROAD UNITERMS SELECTED ORIGINALLY.

- Since the "Draw-a-Person Test" and "Toy Preference Test" are featured in the document, these terms merit inclusion in the indexing. Since proper test names are not *Thesaurus* terms, look in the IAL to see if they are there to avoid creating variant forms of the names. DRAW A PERSON TEST is there (no hyphens or other special characters permitted in Identifiers except left and right parentheses); it can be used "as is." TOY PREFERENCE TEST is not there. Since its form meets the guidelines for new Identifiers, create a new Identifier. Both of these test names are thus indexed as Identifiers.

Therefore, the following terms have been chosen in the exercise:

Descriptors:	Intelligence; Parent Attitudes; Peer Influence; Personality Traits; Preschool Children; Preschool Education; Psychological Testing; Sex Role; Siblings; Socioeconomic Status
Identifiers:	Draw a Person Test; Only Children; Toy Preference Test

b. Use of a New Descriptor/Identifier

All new indexing terms, neither found in the *Thesaurus* nor the *Identifier Authority List*, should be posted as Identifiers. Procedures for the construction of new Identifiers are included in Section VIII, Part 2 of this Manual. All Identifiers are reviewed for proper format prior to release to the ERIC master files; RIE Identifiers are reviewed by the ERIC Facility lexicographic staff, while those indexed for CIJE are reviewed by the CIJE Publisher's editorial staff. Most Identifiers, particularly general conceptual-type terms, that accumulate significant postings in the ERIC database should be considered for Descriptor status and inclusion in the *Thesaurus*. (Identifiers not considered eligible for Descriptor status are usually highly specific proper nouns and noun phrases such as geographic locations, organization names, persons, projects, and test titles.)

When the indexer arrives at the decision that a new Descriptor will be recommended, it is then necessary to:

- research the term;
- locate authorities that can be cited as to its meaning and use;
- develop a definition or Scope Note;
- detect synonyms in whose place the new term will be used;
- place the term somewhere in the hierarchy of existing terms, identifying some terms as Broader (higher in the generic tree), some terms as Narrower (lower in the generic tree), and some as Related (on adjacent branches).

The resultant recommendation is transmitted to the ERIC Facility Lexicographer who provides lexicographic coordination and analysis via the system-wide Vocabulary Review Group (VRG). Candidate Descriptors should be posted as Identifiers until the VRG evaluation has been completed and final dispositions are announced. New Descriptor coordination procedures are fully described in Section VIII, Part 1 of this Manual.

5. **Special Issues**
(See also the "Indexing Reminders" section of the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C], for a summary of special issues in ERIC indexing.)

a. **Indexing Specificity**

A fundamental principle of coordinate indexing is to index at the level of specificity of the document in hand. This principle has been referred to earlier; however, enough problems arise in the implementation to warrant a separate discussion.

Some typical examples of "mis-indexed" specificity include:

- Using CURRICULUM GUIDES in lieu of STATE CURRICULUM GUIDES;
- Indexing all "thinking/learning" as COGNITIVE PROCESSES rather than attempting to locate more appropriate narrower terms (e.g., LOGICAL THINKING, LEARNING PROCESSES, PROBLEM SOLVING);
- Forgetting to index the educational leveler HIGH SCHOOLS for "high school education," using the broader leveler SECONDARY EDUCATION instead [mandatory educational levelers (see **Figure VII-2**) are arranged in broader/narrower relationships, not necessarily conforming to the strict genus/species arrangement of BTs/NTs in the *Thesaurus*.]

In each of these instances, the material is being indexed at a higher or more general level than is warranted by the actual content. Users should be able to rely on the reasonable expectation that <u>all</u> materials dealing with a specific subject (e.g., LOGICAL THINKING) can be found under that term or its NTs, and should not be forced to search elsewhere. There are at least three particular situations when an indexer must consider this question of generality/specificity (genus/species) especially carefully. These are:

1. When a document discusses a concept at <u>both</u> a general and specific level, e.g., a document describing objective tests generally, and multiple choice tests specifically, in about equal detail.
2. When a document discusses a specific concept that must be indexed up to a general concept because the latter is the most specific available *Thesaurus* term.
3. When a document discusses many specifics of a general concept, but none in abundant detail.

With reference to (1) above, an indexer might consider, for example, both broader and narrower Descriptors (i.e., OBJECTIVE TESTS and MULTIPLE CHOICE TESTS) as indexable concepts. If there is a sufficient amount of information worth indexing (always a matter of judgment) about both general and specific concepts, then they are both indexed.

In the case of (2) above, for example, a description, study, or review of the well-known Wechsler Adult Intelligence Scale should be indexed by INTELLIGENCE TESTS, as well as by the test name Identifier. The document is, therefore, made available at the level of the most specific available Descriptor (i.e., INTELLIGENCE TESTS, not TESTS) and at the level of the specific test name as well. This guideline requires expertise, knowledge of the system's users, and mature judgment. Further subject specificity may be provided as necessary by Identifiers, but Identifiers should not be used *in lieu of* the most specific available Descriptor. Frequently, specific names that are *new* to the database, or coined terms by *lesser-known* authors, are not indexed, particularly when they are called out in other fields (e.g., title, abstract, descriptive note) and can be retrieved by computer searching of free text.

The third area (3) above, is perhaps the most troublesome. The indexer must develop a "feel" for what is a sufficient or reasonable amount of information about a concept that makes it "indexable." Experience in reviewing search results, as well as in indexing, can be helpful in this area. Some examples may illustrate this problem.

- Example 1:

  A document has the Descriptor AGRICULTURAL PERSONNEL. The abstract shows that the population of participants included:

  - extension personnel;
  - agriculture teachers;
  - home economics teachers;
  - forestry personnel;
  - professional employees in agribusiness.

  In the judgment of the indexer, there was insufficient data about the specific occupational groups to merit indexing each one separately. The groups, however, were part of the class "agricultural personnel," and that concept only was indexed. (Parenthetically, mention of the occupational group names in the abstract ensures access to them via free-text computerized retrieval.)

- Example 2:

  Describing a population of teachers in a study, the document lists in tables the following:

  - age;
  - sex;
  - educational level attained;
  - participation rate of conference attendance.

The indexer must decide whether the information provided is significant enough to index specifically. Since all of the above factors were significant variables in the study, the indexer decided to index the group of concepts at the generic level TEACHER CHARACTERISTICS, as well as specifically with AGE DIFFERENCES, SEX DIFFERENCES, EDUCATIONAL ATTAINMENT, and TEACHER PARTICIPATION.

- Example 3:

  A document entitled Guidelines for the *Referral of Children Who Are Suspected or Known to be Exceptional* describes and defines in detail the:

  - orthopedically handicapped;
  - chronically ill;
  - hearing impaired and deaf;
  - blind and partially seeing;
  - emotionally disturbed;
  - socially maladjusted;
  - slow learners;
  - mentally retarded;
  - multiply handicapped;
  - gifted.

  Because of the considerable detail provided for each category, the indexer decides that this document should be retrievable through the generic concepts EXCEPTIONAL PERSONS and DISABILITIES, as well as through each specific area of exceptionality mentioned above.

- Example 4:

  A program guide entitled the *La Grange Area Department of Special Education Handbook* describes a sizable, reputable program that includes education for the:

  - mentally retarded;
  - physically disabled;
  - socially maladjusted;
  - emotionally disturbed.

  However, nearly all guides for "Special Education" programs include and describe each of these areas. The information on each area of exceptionality is usually similar throughout these guides. Their inclusion in such a guide is implicit and need not be indexed. In contrast to the previous example, the areas of exceptionality covered are not indexable information. The document should be indexed by the concepts PROGRAM GUIDES and SPECIAL EDUCATION, and terms representing its grade level and origin (school district).

b. Major/Minor Index Terms

(See also the "Indexing Reminders — Majoring" section of the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].)

(1) General

The ERIC indexer is required to identify the "Major" and most important concepts contained in a document by immediately preceding the equivalent term or terms selected with an asterisk (*). ★*The basic rule to remember is that at least one (1) and not more than five (5) Descriptors (six if only one major Identifier is used) may be designated as Major. No more than two (2) Identifiers may be designated as Major.* All index terms not preceded by an asterisk are automatically considered "Minor" for that document. Any index term may be Major or Minor, depending on the document.

The purpose of this arrangement is to:

- identify the chief or major concepts in the document, thereby providing the ERIC user with additional information and help in the search and evaluation of relevant references on particular subjects.
- provide at least one subject route to the document in the RIE/CIJE printed subject indexes, but not so many as to make the indexes excessively large.
- provide computer searchers the capability of designing either broad, exhaustive searches that aim at comprehensive recall of all references on a subject, or narrower, targeted searches that aim at selective retrieval of some (but perhaps not all) references highly relevant to the subject.

As with the Generality/Specificity guidelines in the immediately preceding section, sufficient problems arise in the implementation of the Major/Minor guidelines to warrant additional discussion and examples.

(2) Utility of Terms for the Printed Indexes

Problems occur in this area when the Major terms that emerge are excessively focused, thereby providing insufficient access routes. The ERIC indexer must be aware that the results of the indexing function are used by both manual and computer searchers. This does not mean, however, that the indexer should forget the fundamental rule to "Index to the specific level of subject matter covered by the document." Rather, it means that the indexer, taking full advantage of the *Thesaurus* must consider and provide legitimate access points for both groups of searchers.

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Especially for manual searchers (who cannot search on second or third words appearing in a given Descriptor), the major Descriptors assigned should provide as many valid access routes as possible under the circumstances. An example can help make this point. Assume the major terms assigned to a document were: *COLLEGE CURRICULUM; *COLLEGE INSTRUCTION; *COLLEGE SCIENCE; *COLLEGE STUDENTS. The indexer, in reviewing such work, should clearly look for legitimate ways to introduce more "spread" in the indexing. Not only is it likely that more specific terms are appropriate, but without them, the manual user would be at a disadvantage by being limited in retrieval to solely the "College" part of the printed index.

A second type of problem occurs when the major terms assigned are so specialized that all by themselves in the printed indexes they excessively restrict user access points (i.e., the users simply wouldn't think to look under them in many cases). Given a document on heterogeneous and homogeneous grouping within the instructional process, not only should the very specific Descriptors HETEROGENEOUS GROUPING and HOMOGENEOUS GROUPING be "majored," but so should the most specific "instruction" term—in this case GROUP INSTRUCTION. If only the very specialized terms were majored, access would be unnecessarily limited and the manual user would be at a disadvantage.

★*It is important for a specialized Clearinghouse (or any specialist for that matter) not to confuse their own viewpoint and interests with those of all other users. It is prudent, therefore, during the indexing process, to step back at least once and consider the problem of access to a given document by all of its potential users.* Again, the rule of indexing to the specific level of subject matter dealt with by the document must be observed. The guidance here merely suggests that legitimate variegated access routes to a document not be ignored.

(3) Excessively Broad Terms

Excessively broad terms (e.g., DEVELOPMENT), which lack discrimination, and which if used without restraint might collect large numbers of postings in a single journal issue, should be avoided as Majors, just as they should generally be avoided in the indexing process as a whole. Examples of very broad Descriptors that should be used very selectively and only in situations really calling for them are displayed in **Figure VII-10**.

(4) Terms Not Representing Subject Matter

Terms that represent population concepts, educational level, age level, methodology, and document type characteristics can be thought of as not representing the subject matter of the document, at least in the same sense that a clear subject matter term like GEOLOGY does.

ABILITY	GUIDANCE	PUBLICATIONS
ACHIEVEMENT	GUIDES	RELATIONSHIP
ACTIVITIES	IMPROVEMENT	REPORTS
ATTITUDES	INFLUENCES	RESEARCH
BACKGROUND	INSTITUTIONS	RESOURCES
BEHAVIOR	INSTRUCTION	RESPONSIBILITY
CHANGE	LANGUAGE	SCHOOLS
COUNSELING	LANGUAGES	SCIENCES
COURSES	LEARNING	SELECTION
CULTURE	MEASURES (INDIVIDUALS)	SERVICES
CURRICULUM	METHODS	SKILLS
DATA	NEEDS	STANDARDS
DESIGN	OBJECTIVES	STATUS
DEVELOPMENT	OCCUPATIONS	STUDENTS
EDUCATION	ORGANIZATION	STUDY
EMPLOYMENT	PARTICIPATION	TEACHERS
ENVIRONMENT	PERFORMANCE	TESTING
EQUIPMENT	PERSONNEL	TESTS
EVALUATION	PLANNING	THEORIES
FACILITIES	PROBLEMS	THERAPY
GROUPS	PROGRAMS	TRAINING

FIGURE VII-10: VERY BROAD DESCRIPTORS

Since the applicability of these non-subject terms to a document is generally a yes-no proposition and not a matter of degree, the question arises as to how to handle major-minor indicators vis-a-vis these terms.

Such Descriptors should be made minor in cases where they do no more than identify the intended education level, age level, population, research methodology, type of document, etc. However, such Descriptors may be made Major when they are the topic of significant discussion in the document. In such situations these terms become, in effect, subject terms and should be handled the same way as subject terms, i.e., if the document contains substantial discussion about the concept then the term representing that concept should be made Major no matter what type of term it is.

In order to clarify this point, a number of examples follow:

- **Educational Level**

  A catalog of math concepts and skills for fifth grade math would use GRADE 5 as a major Descriptor and INTERMEDIATE GRADES as a minor Descriptor (the latter indicating mandatory educational level). However, a review of textbooks to determine what math concepts are usually taught in grades 4, 5, or 6 might have INTERMEDIATE GRADES as a major Descriptor (indicating subject content).

- **Population or Age Level**

  A report of a study involving black teenagers (ages 13-18), but that did not discuss the significance of their being black or teenagers would use BLACK YOUTH and ADOLESCENTS as minor Descriptors (indicating population and age level). However, a study entitled *Career Planning by African-American Teenagers* would probably have the same Descriptors as major (indicating significant subject content). The Identifier "African Americans" would be an additional index term (probably major) on the latter document. (NOTE: See discussion of ERIC indexing of variant ethnic names in the "Indexing Reminders — Overindexing" section of the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].)

- **Methodology**

  A report of a research study that made use of matched groups and included some discussion of the appropriateness of such a technique might use MATCHED GROUPS as a minor Descriptor. On the other hand, a paper on the futility of setting up matched group research designs for a particular type of research should use MATCHED GROUPS as a major Descriptor (representing major subject content).

- **Document Characteristics/Publication Type**
  (See related **Section VII.I.3.d**, "Document Form/Type.")

  A teacher's guide that contains a questionnaire, among other materials, would use QUESTIONNAIRES as a minor Descriptor (representing document characteristics/type) and pubtype code 160. A description of an evaluation project that designed and field tested a questionnaire should use QUESTIONNAIRES as a major Descriptor.

  An auto mechanics curriculum guide containing behavioral objectives, suggested activities, a workbook, and evaluation questions keyed to the objectives might have CURRICULUM GUIDES, BEHAVIORAL OBJECTIVES, LEARNING ACTIVITIES, WORKBOOKS, and CRITERION REFERENCED TESTS as minor Descriptors (document characteristics/publication types). A manual on how to design curriculum guides or how to develop and evaluate behavioral objectives would have CURRICULUM GUIDES or BEHAVIORAL OBJECTIVES as major Descriptors (representing major subject content).

c. Capitalization of Index Terms

The ERIC database is an upper and lower case file and all index terms must be entered into the ERIC records in correct upper and lower case form.

The *Identifier Authority List* (IAL) is printed in upper and lower case and presents no problem in this regard. All the indexer has to do is use the form as printed in the IAL. The indexer will find that the initial letters of every Identifier word, usually excepting certain conjunctions, articles, and prepositions, are in upper case in the IAL.

The ERIC *Thesaurus* "Working Copy" is currently printed in all upper case only and therefore the indexer must remember to convert all Descriptors to initial capital letters only. The ERIC *Thesaurus* "published edition" has a mixed upper and lower case format that, if used for indexing, has to be converted to the preferred ERIC format.

Articles, conjunctions, and prepositions are never capitalized in Descriptors unless they are the first word. There are, however, certain Identifiers where articles, conjunctions, and prepositions are appropriately capitalized, e.g., literary titles such as "Graduate (The)." Some examples appear in **Figure VII-11**.

	DESCRIPTORS		IDENTIFIERS	
ARTICLES/ CONJUNCTIONS/ PREPOSITIONS	USUAL USAGE (LC) (Example)	EXCEPTION (UC) (Example)	USUAL USAGE (LC) (Example)	EXCEPTION (UC) (Example)
A	Postsecondary Education as a Field of Study	None	Visit to a Small Planet	A Better Chance Inc
AN	None	None	To an Athlete Dying Young	---
AND	Food and Drug Inspectors	None	Crime and Punishment	And Searching Mind*
AS	Parents as Teachers	None	Maryland Self Concept as a Learner Scale	As You Like It
BY	Management by Objectives	None	ABC (Approach by Concept) Method	By Love Possessed*
FOR	English for Special Purposes	None	Fund for Adult Education	For Whom the Bell Tolls*
IN	Reduction in Force	In School Suspension; In State Students	Catcher in the Rye	In Cold Blood
OF	Leaves of Absence	None	Signers of the United States Constitution	Of This Time of That Place
ON	Time on Task	On Campus Students; On the Job Training	Soul on Ice	On the Origin of Species
OR	Publish or Perish Issue	None	Truth or Consequences Administrative Unit NM*	---
PER	Expenditure per Student	None	---	Per Capita*
THE	State of the Art Reviews	None	College of the Sea (England)	Graduate (The)
TO	Adjustment (to Environment)	None	Pathways to Identity Project	To Kill a Mockingbird

LC = Lower Case; UC = Upper Case
*Not Currently an Identifier

FIGURE VII-11: CAPITALIZATION OF ARTICLES/CONJUNCTIONS/ PREPOSITIONS IN DESCRIPTORS AND IDENTIFIERS

d. Punctuation of Index Terms

Punctuation of Descriptors and Identifiers is kept to a bare minimum because the special characters used in punctuation can later create severe matching problems in the retrieval process.

★*The only punctuation marks permitted as part of index terms are left and right parentheses (as used to enclose a qualifier). Hyphens, dashes, apostrophes, quotation marks, periods, commas, and all other such special characters, are invalid in the Descriptor and Identifier fields.*

Semicolons are used as subfield delimiters, separating one index term from another, but are not valid as part of an index term.

e. Overindexing and Underindexing
(See also the "Indexing Reminders — Overindexing" section of the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)* [Appendix C].)

One of the most prevalent indexing faults is the assignment of too many or too few index terms. These two faults tend to be mutually exclusive. The indexer that overindexes generally does not also underindex, and vice-versa.

Underindexing is generally the result of failure to put oneself in the position of the searcher or end user. An underindexed item is generally either tagged with a few broad terms behind which the document is effectively lost, or it is tagged with a few specialized terms the indexer is grateful to find in the title or abstract.

Overindexing can generally be traced to the following factors:

- failure to take the time to decide what is truly indexable information and what is merely mentioned in passing. It takes less time to overindex than to index with discrimination.
- the inclusion of several terms all beginning with the same lead-in word, e.g., Parent Education, Parent Participation, Parent Conferences, Parents, Parent Influence, Parent Role. The indexer, abrogating the responsibility to choose the "best" term to represent a given conceptual area, takes the scattergun approach or throws in all the possibilities.
- permitting an imbalance between the size of the document (i.e., small) and the number of index terms (i.e., many). The indexer, forgetting the end user, squeezes every concept out of a five- or six-page paper even though many terms may be represented by less than a significant amount of text. A user retrieving such a minor amount of material is unlikely to thank such an indexer.

- the thesaurus does not offer specific enough terminology to index a complex topic and the indexer, fearing that the user will not find the document, zealously offers as many approaches with Descriptors as can be imagined. Unfortunately, this leads to as many false drops as relevant hits. This situation can almost always be avoided by using he Identifier field for supplemental specific indexing.

In many instances, experience alone will reduce the tendency to overindex or underindex. As the indexer gains confidence with his/her indexing ability and with the ability of thesaurus language to lead users to the document, indexing will improve. Indexers often benefit from training and experience in searching, so that they can see the impact of overindexing and underindexing on retrieval.

6. Indexing Review

After the indexer has completed all the basic tasks involved in indexing (other than recording and input—see item "7" immediately following), i.e.:

- examination of the document;
- identification of indexable concepts;
- translation of selected concepts into *Thesaurus* terminology;
- matching non-*Thesaurus* concepts to the terms or preferred formats of the *Identifier Authority List* (IAL);
- tagging of major concepts/terms with asterisks;
- documenting new indexing terms not in the *Thesaurus* or IAL for future use;
- consideration of recommending new or existing Identifiers as candidate Descriptors—completion of *Vocabulary Development Form* (see Section VIII, Part 1),

the finished product should receive a final review. This review may be accomplished by the indexer or by a Supervisor/Reviewer. The following questions should be asked about the work:

1. Do the designated Major terms represent the emphasis of the document?
2. Are the Major terms reflected (conceptually or by equivalent terms) in the Abstract or Title, so that there may be no question in the user's mind about their relevance?
3. Are the possibilities for "False Drops" minimal?
4. Are all significant and important concepts in the document covered by Descriptors or Identifiers?

5. Can the index terms be fitted together in narrative form to provide an accurate idea of the subject matter of the document?

6. Has excessive "clustering" of terms beginning with the same word been avoided?

7. Do the Major terms provide a class description that could be expected to occur spontaneously to a user, or are they too specialized and obscure?

8. If the scope of the document overlaps with other Clearinghouses, have their viewpoints been taken into account (e.g., by consulting their "indexing rules" in the *ERIC Indexing Handbook (Clearinghouse Indexing Practices)*, and via examination of their scope of interest statement and "most frequently used Descriptors" list?).

7. Recording and Input of Indexing on ERIC Resumes

The rules for transcribing onto the document/journal article resume all Descriptors and Identifiers finally selected in indexing, and for identifying them as Major or Minor, are provided in the "Data Entry" section of this manual (Section IX). The characteristics, limitations, and requirements for completing the Descriptor and Identifier fields are covered in the "Cataloging" section (Section V).

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